City of Biddeford
Planning Board

June 3, 2026 at 6:00 PM
City Hall Council Chambers & Teams

Join Teams Meeting Online

Teams Instructions

1. Pledge of Allegiance
2. Declaration of Quorum/Voting Members
3. Adjustment(s) to Agenda
4. Planner's Business
   - 4.a Staff Review Committee Meeting Minutes from May 12, 2026
5. Consent Agenda
   - 5.a Approval of Meeting Minutes from May 20th workshop & regular meeting.
6. Open Public Hearing
7. New Business
   - 7.a The Planning Board will review and vote on the Natural Resources Chapter of the Comprehensive Plan.
   - 7.b The Planning Board will review and vote onThe Natural Water Resources Chapter of the Comprehensive Plan.
   - 7.c The Planning Board will review and vote on the Existing Land Use Chapter of the Comprehensive Plan.
   - 7.d The Planning Board will review and vote on the Future Land Use Chapter of the Comprehensive Plan.
   - 7.e The Planning Board will review and vote on the Historic Archeological Resources Chapter of the Comprehensive Plan.
8. Close Public Hearing
9. Unfinished Business
10. Other Business

11. Adjourn

The Board reserves the right to halt official business at 9:30 p.m. Items not heard at tonight's meeting shall be rescheduled to the next meeting of the Board. All materials pertaining to items on the agenda are available for public review at the Biddeford Planning Department, second floor, Biddeford City Hall during normal business hours.

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City of Biddeford Government

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INTERNAL DEVELOPMENT REVIEW
MEETING MINUTES
May 12, 2026

Declaration of voting members/quorum

Staff- Craig Chekan & Tom Miligan from Engineering, Ken Thorpe & Jason Crocker from the Fire Department, David Galbraith & Nan Whitten from Planning
On Teams: Roby Fecteau from Codes

1. **Declaration of Quorum**
2. **New Business**
   2 a 2026.15 Staff Review Commission to review Conditional Use Permit Application for Dale Wilkinson to build an 86' x 50' duplex with an attached 4-bay garage to be used as a contractor's yard. The property is located on Dennett Road (Tax Map 1, Lot 53-4) in the Rural Farm Zone.
   - **Galbraith introduced the project**
   - **The applicants, Dale & Cheryl Wilkinson represented the application**
   - **The duplex will be in the front**
   - **The turn around will be 65 x 80**
   - **The 2 units over the garage will be for the children then rented down the road**
   - **Crocker asked about the turning apron and felt it would be sufficient**
   - **Fecteau asked about external storage, there will rarely be external storage, but they have racks for storage**
   - **Milligan asked where the equipment is stored now. The trucks are kept at home the equipment is on the job sites. When on Dennett road they always have empty trucks.**
   - **Fecteau stated that Dennett in Biddeford is posted during the thaw going into Dayton.**

     MOTIONS: 10:46 AM
     Motion-Fecteau-Motion to approve the Conditional Use Permit Application for Dale and Cheryl Wilkinson to build an 86’ x 50’ duplex with an attached 4 bay garage as a minor site plan review as per Article II.
     Second-Galbraith
     Vote-Motion passed unanimously
3. **Other Business**

3.a. Ginger Hill Sevigny Road

- **Fecteau stated that the City has asked for the plan to be redesigned. There are vernal pools that need to be studied and shown on the plan, water availability issues, Maine Water will need to assist with supplemental water.**

3.b. 754 Alfred Street

- **The applicant will be adding a fire hydrant**
- **The Fire Department has concerns that the equipment will bottom out.**
- **When leaving a call, the Fire Department will be getting out using the light on Alfred Street from Old Dogs Way**
- **The sidewalk is needed on Alfred Street**
- **Fecteau is concerned about the finished elevation and how steep it is.**
- **He also wants to know if they are going to move the guardrail and replace it with a 6' sidewalk. The guardrail is needed as there is a 9' drop**
- **The commission would like a vertical road profile configuration with k value**
- **Wright Pierce will review stormwater**
- **Maine Water needs to do a flow test**

3.c. Popeyes

- **There will be a cub cut to Robins**
- **Fire Department must depart using the light**
- **The applicant is responsible for installing sidewalks in front of the property**
- **The sewer is to tie into Old Dogs Way**
- **The staff is ok with doing preliminary & final together**
- **Milligan asked where the snow storage will be and if a salt management plan will be needed. No**

3.d. FMI/Intermat

- **The applicants are asking for preliminary**
- **Staff wants to know if there are future phases and what about the vernal pools that were originally listed.**
- **Engineering & Stormwater reviews are needed**
- **The lot has been cleared but not stumped**
- **The commission needs a plan on dumping the process water**
- **They also want information on the water tank, where are they releasing the water.**
- **Can the applicant meet capacity with the remote fire hook up**
- **There is nothing on fire protection yet**

_____ _____

Signature-City Planner **Date**

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PLANNING BOARD MEETING MINUTES
May 20, 2026
DRAFT

1. **Pledge of Allegiance**
2. **Declaration of Quorum**
   Planning Board: John McCurry, Matt Sargent-Dubois, Leah Schaffer, Chico Potvin (Alternate Member) & Rob Nicoll (Alternate Member)
   Staff: David Galbraith & Nan Whitten
   Chico Potvin & Rob Nicoll will vote this evening in place of Kayla Lewis & Roch Angers
3. **Adjustments to Agenda-none**
4. **Planner's Business**
   4.a. Meeting Minutes from Staff Review Committee for May 5. 2026
5. **Consent Agenda**
   5.a. Approval of Meeting Minutes from May 6, 2026, Regular Meeting & Workshop
   MOTIONS:
   Motion-Sargent-Dubois-Motion to approve Meeting Minutes as presented
   Second-Nicoll
   Vote: Motion passed unanimously
6. **Unfinished Business-none**
7. **New Business**

7.a. 2026.23 Review a request for extension to Planning Board approval for Avesta Rochambeau on Barra Road (Tax Map 7, Lot 15) in the R-3 zone. The original request was approved August 7, 2024, with an expiration date of August 7, 2026

- **Galbraith introduced the project explaining that this is an affordable housing program and just recently secured funding from the State**
- **Ryan Fecteau from AVESTA Housing is at the meeting to answer questions if needed.**
- **NO PUBLIC COMMENTS**
  MOTIONS: 6:04 PM
  Motion-Sargent-Dubois-Motion to approve 1-year Extension Request for AVESTA Housing to build a 46-unit low-income housing project for the elderly located at Barra Road (Tax Map 7, Lot 15) in the R-3 zone.
  Second-Nicoll
  Vote-Motion passed unanimously

7.b. 2025.09 The Planning Board will review a request from Bateman Partners to extend their approval of Forest Green Apartments located at 1 Parkview Court (Tax Map 32, Lot 1) in the R-3 Zone. Bateman Partners obtained their original approval on

June 18, 2025, with an expiration of June 18, 2026.

- **Galbraith introduced the project explaining that this is an affordable housing project that has not secured funding yet.**
- **Sargent-Dubois asked for a sewer capacity update. There has been a contribution from the applicant to update the sewer system**
- **Potvin asked what happens if the financing through the State continues to fall through. The applicant will keep trying as well as additional funding sources.**
- **NO PUBLIC COMMENTS**
  MOTIONS: 6:09 PM
  Motion-Sargent Dubois-Motion to approve a 1-year Extension Request for Final Site Plan and Subdivision Review for Bateman Partners, LLC for two (2) new buildings containing 60-unit low/moderate income (LMI) apartments within the Forest Green Apartments located at 641 Main Street (Map 32, Lot 1) in the Mixed Residential (R3) Zoning District and within the Shoreland Overlay District.
  Second-Schaffer
  Vote-Motion passed unanimously
  McCurry requested JDAs for these cases be added to the packets going forward.

7.c. 2026.21 Review of a request for an after-the-fact permit for the 59 sites that were not identified on the hand drawn map submitted to the city by the previous owners in 1998. The property is for Riverbend Retreat 608-610 New County Road (Tax Map 6, Lot 35-2} in the RF Zone.

- **Galbraith introduced the project to the Board**
- **Current owners purchased the campground and renamed it Riverbend Retreat.**
- **The prior owners added 56 campsites without approval or permits.**
- **The current owners have received Saco River Corridor Commission (SRCC) approval and soils tests.**
- **There are no changes proposed the goal is to bring the property into compliance.**
- **Potvin asked how many campsites the property is taxed for.**
- **Bryce Avallone (one of the new owners) stated that they are working with the Assessing Department, and the property is not taxed on campsites but on acreage.**
- **Potvin asked if there would be fines, they are not sure, but this issue was created by the former owner.**
- **McCurry asked how the new owners obtained clear title. The deed does not deal with campsites but acreage and metes and bounds.**
- **Schaffer asked about the 1 site that was not approved by the SRCC. This site is no longer used as a camp site.**
- **THERE WERE NO PUBLIC COMMENTS**

MOTION: 6:16 PM

Motion-Sargent-Dubois-Motion to approve Case # 2026.21 Preliminary and Final Site Plan Review for the Riverbend Retreat Campground an "after the fact" Site Plan Amendment for 59 additional camp sites located at 608-610 New County Road (PID# Map 6, Lot 35-2), with the below Conditions of Approval:

a) All previously approved Conditions of Approval for the property are hereby reaffirmed.

b) Septic systems for the property shall be sanitary and functional to the satisfaction of the City's Director of Code Enforcement.

c) All permits, after the fact or otherwise shall be obtained to the satisfaction of the City's Director of Code Enforcement.

d) No new campsites, buildings, or site modification may be constructed / undertaken on the property without obtaining Planning Board review and approval.

Second-Nicoll

Vote-Motion passed unanimously

7.d. 2025.10 The Planning Board will review a Preliminary Application for Fiber Materials Inc. The applicant plans a 104,000 SF addition to the existing structure to add manufacturing capacity and the associated infrastructure. The address of the property is 389 Hill Street (Tax Map 74, Lot 7) in the 1-2 zone.

- **Galbraith introduced the project and explained that this is for preliminary approval.**
- **Tom Saucier from Site Design Associates & Silas Canavan from Canavan Civil Consultants represented the applicant.**
- **Saucier conducted a Power Point presentation regarding the project.**
- **There will be an 8' mesh fence with barbed wire**
- **The utilities will be underground**
- **There will be a stormwater detaining system under the parking area.**
- **The applicant is requesting 3 waivers:**
  a. **Article XI, II section 5 B.4.f.1., Approved by Planning Board 9-17-25**
  b. **Article VI.26.F. Slopes within 10 ft property line; no slope steeper than 3 H:IV**
  c. **Article XI.II.5.B.I.e.3. No slopes steeper than 2 ft horizontal to 1 ft vertical**
- **McCurry asked how work getting out in the afternoon will interfere with schools getting out. The release times are not the same so there should be no impact.**
- **Potvin mentioned stormwater noting that the water is high, when the water gets higher can the site handle the excess water. They believe so but are waiting on DEP approval.**
- **Schaffer asked about the fencing in the front of the building. It will be steel decorative.**
- **Potvin agreed that the end of day at the business should not impact school release times.**

- **Schaffer asked about the firewall and whether the building would be sprinkled. The Fire Marshall has approved the project and there will be no firewall, there is a water pump in the water house.**
- **Potvin mentioned Chapter 500 DEP Stormwater Law**
- **Nicoll asked about the parking spaces and shift changes. The excess parking spaces are for the eventual Phase II. As well as the loop around the back is to accommodate Phase II**
- **THERE WERE NO PUBLIC COMMENTS**
  MOTIONS: 6:46 PM
  Motion-Sargent-Dubois-Motion to approve waiver of Article VI.26.F. The top of a cut or the bottom of a fill section shall not be closer than 10 feet to an adjoining property, nor shall said cut or fill exceed the three-to-one slope unless the Planning Board waives either or both requirements upon the applicant's demonstration, certified by a Maine licensed professional engineer (P.E.), that a steeper slope, whether or not closer than 10 feet to the adjoining property, is stable, will not result in excessive downstream erosion or sedimentation, nor cause any additional adverse impact on the adjoining property.
  Second-Potvin
  Vote Motion passed unanimously
  Motion-Sargent-Dubois-Motion to approve waiver of Article XI.II.5.B.1.e.3. No slope shall be created which results in a slope of more than two feet horizontal to one foot vertically unless proper retaining walls are proposed.
  Second-Schaffer
  Vote-Motion passed unanimously
  Motion-Sargent-Dubois-Motion to approve waiver of Article XI, II. section 5.B.4.f.1 No paving, parking, or storage shall be permitted within the required setback of any side or rear property line;
  Second-Nicoll
  Vote-Motion passed unanimously
  Motion-Sargent-Dubois- Motion to Approve Case # 2025.10 for Preliminary Site Plan approval for the construction of a 50,395 square foot addition and the creation of 1.94 acres of new paving and parking located at 389 Hill Street (Tax Map 74, Lot 7), within the Industrial 2 (I-2) zoning district.
  Second-Nicoll
  Motion passed unanimously

7.e. 2025.21 Subdivision Amendment request for Peter Mourmourais (Eagle River Run) on River Road (Tax Map 6, Lot 49) in the Rural Zone. The applicant would like to amend the pre-approved 6-lot subdivision to a 2-lot subdivision with a private way.

- **Galbraith introduced the project**
- **Silas Canavan from Canavan Civil Consultants represented the applicant**
- **PUBLIC COMMENTS**
- **John Gagne of 155 River Road is concerned about the utilities and culverts**
  MOTIONS: 6:56 PM

Motion-Sargent-Dubois-Motion to approve waiver of Article II, Section 66-52(d) requiring monumentation of all new lot corners.
Second-Nicoll
Vote-Motion passed unanimously
Motion-Sargent-Dubois- Motion to Approve Case # 2025.21 for the approval of the subdivision amendment, from six (6) lots to two (2) lots, approval of the two (2) lot private way and grant the requested monumentation waiver to Article II, Section 66-52(d) (Re: monumentation) for the Eagle River Run Subdivision located on River Road (Tax Map 6, Lot 49), with the following Conditions of Approval:
a. All previously approved Conditions of Approval (COA) are hereby reaffirmed.
b. Prior to the issuance of a building permit for the proposed new house lot the applicant's project engineer shall submit a letter to the City's Planning and Engineering Departments certifying that the constructed private way has been constructed to the City's 5-10 lot private way standards. This letter shall be signed and stamped by Silas Canavan the applicant's project engineer.
c. Prior to the issuance of an Occupancy Permit for either of the proposed house lots, the applicant shall provide the City's Planning Department with a recorded copy of the recorded Eagle River Run Homeowners Association documents related to their responsibility for snow plowing, repairs and resurfacing, drainage infrastructure maintenance, roadside vegetation control. The City of Biddeford bears no responsibility for maintenance, plowing, or repair of the private way.
Second-Schaffer
Vote-Motion passed unanimously

7.f. 2026.19 Review of a request for a 1-lot private way for Robert Laverriere on 34 Proctor Road (Tax Map 3, Lot 12-3) in the RF Zone. THIS ITEM HAS BEEN POSTPONED

7.g. 2025.07 Final review of an application for Site Plan Review for Bohler c/o Chick-fil-A to construct a 4900±SF restaurant with a drive-thru at 150 Shops Way (Tax Map 2, Lot 24) in the Business 2 (B2) Zone.

- **Applicant had not arrived at the meeting yet.**

MOTION
Motion-Sargent-Dubois-Motion to table 2025.07 Final review of an application for Site Plan Review for Bohler c/o Chick-fil-A to construct a 4900±SF restaurant with a drive-thru at 150 Shops Way (Tax Map 2, Lot 24) in the Business 2 (B2) Zone until June 17th meeting
Second-Nicoll
Vote-Motion passed 3-1 (Sargent-Dubois, Schaffer, & Nicoll in favor Potvin against)
Motion-Sargent-Dubois-Motion to amend previous motion to table item until after Other Business Category has been completed.
Second-Potvin

Vote-Motion Passed Unanimously
MOTION: 7:12 PM
Motion-Sargent-Dubois- Motion to remove from the table 2025.07 Final review of an application for Site Plan Review for Bohler c/o Chick-fil-A to construct a 4900±SF restaurant with a drive-thru at 150 Shops Way (Tax Map 2, Lot 24) in the Business 2 (B2) Zone
Second-Nicoll
Vote-Motion passed unanimously

- **Galbraith introduced the project**
- **He explained the hold up was waiting for the Traffic Movement Permit (TMP)**
- **Joey Fonesca from Bohler Engineering represented the applicant**
- **There will be a sidewalk connecting an abutting property**
- **McCurry asked how they were able to demolish the previous structure**
- **The owners of the property obtained a permit for demo not Chick-fil-A**
- **Potvin asked about erosion control, it will be controlled.**

NO PUBLIC COMMENTS
MOTION: 7:17PM
Motion-Potvin- Motion to Approve Case # 2025.07 A Final Site Plan Review Application for Bohler Engineering c/o Chick-fil-A to rebuild a currently vacant Building Previously Occupied by Olive Garden into a Chick-fil-A Quick-Serve Restaurant at 150 Shops Way (Tax Map 2, Lot 24) in the Highway Business District (B2), with the adoption of the attached Findings of Fact and recommended Condition of Approval (COA)
Second-Sargent-Dubois
Vote-Motion passed unanimously

8. Other Business

- **Schaffer asked what the game plan is now that Adi Iriqat has resigned**
- **We will advertise his replacement by the end of the week**
- **There are 2 other positions that have been approved to start at the beginning of the year which we will be advertising early**
- **McCurry suggested we advertise early being clear about the starting date.**
- **Potvin asked about giving extensions to certain projects when they have not been approved for funding, with the sewer situation, will that hold up other projects? NO**

9. Adjourn

MOTION 7:19 PM
Motion-Sargent-Dubois-Motion to Adjourn
Second-Schaffer
Vote-Motion passed unanimously

_____ _____

Signature-Planning Board Chair **Date**

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PLANNING BOARD MEETING MINUTES
WORKSHOP PLANNING BOARD &CONSERVATION COMMISSION
May 20, 2026
DRAFT

1. **Declaration of Quorum**
   SMPDC: Jamel Torres & Malia Corero
   Conservation Commission: Denis Rioux, Erik Heumiller, Richard Rhames, Patrick Conlan, Chris Veazie
   Planning Board: John McCurry, Chico Potvin Rob Nicoll & Matt Sargent-Dubois
   Staff: David Galbraith & Nan Whitten
2. **The Planning Board, SMPDC & Conservation Commission are holding a joint workshop to continue their work on the land use map for the Comprehensive Plan**
   - **Corero started by introducing the maps they produced for the meeting**
   - **Rhames talked about the Mobil Home Overlay Zone & Growth areas**
   - **The two boards talked about changes & options**
   - **Mike Eon participated in reference to his land**
   - **Vernal Pools on the Eon property has been discussed**
   - **Adjourn 5:49 PM**

_____ _____

Signature-Planning Board Chair **Date**

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11 Natural Resources

1. Overview of Natural Resources

Biddeford is diverse in its geological and ecological setting. With a mix of large, regionally important forested wetlands, agricultural soils, coastal regions, ten (10) separate watersheds, both rural homes and dense downtown areas, as well as industrial areas — there is a need to find balance in the environmental effects of our continued growth on natural resources throughout Biddeford.

2. Natural Resources at a Glance

Size & Characteristics

- 12.8 miles of riverfront*
- 16 miles of coastline*
- 19,475 acres of total land in Biddeford**
- 7,968 acres of undeveloped forested land** (~41% of total acreage)
    - 5,246 acres of this exist with State Focus Areas** (~27% of total acreage)
- 1,700 acres with permanent conservation protections*** (~8.7% of total acreage)
- 254 acres of municipal-owned land classified as Open Space*** (~1.3% of total acreage)

Working Landscapes

- 3,700 acres of combined commercial timber harvesting (1991-2023)****
- 463 acres enrolled in the farmland program (27 parcels)**
    - Most parcels include acreage of woodlands not registered as tree growth

Wildlife & Habitat Info**

- 31 special concern, threatened, or endangered plant and animal species
- 9 rare and exemplary Natural Communities
- 4 Significant Wildlife Habitats
- 2 Essential Wildlife Habitats
- A focus area of Statewide Ecological Significance
- Biddeford currently ranks 6th in all of Maine for the total number of listed species

Sources:
* *Conservative estimates, using cover type analysis using satellite images*
** *Data from Beginning with Habitat, MDIFW*

*** *Biddeford Assessing Department, 2025*
**** *Department of Agriculture, Conservation, and Forestry / Maine Forest Service*

3. Habitats in Biddeford

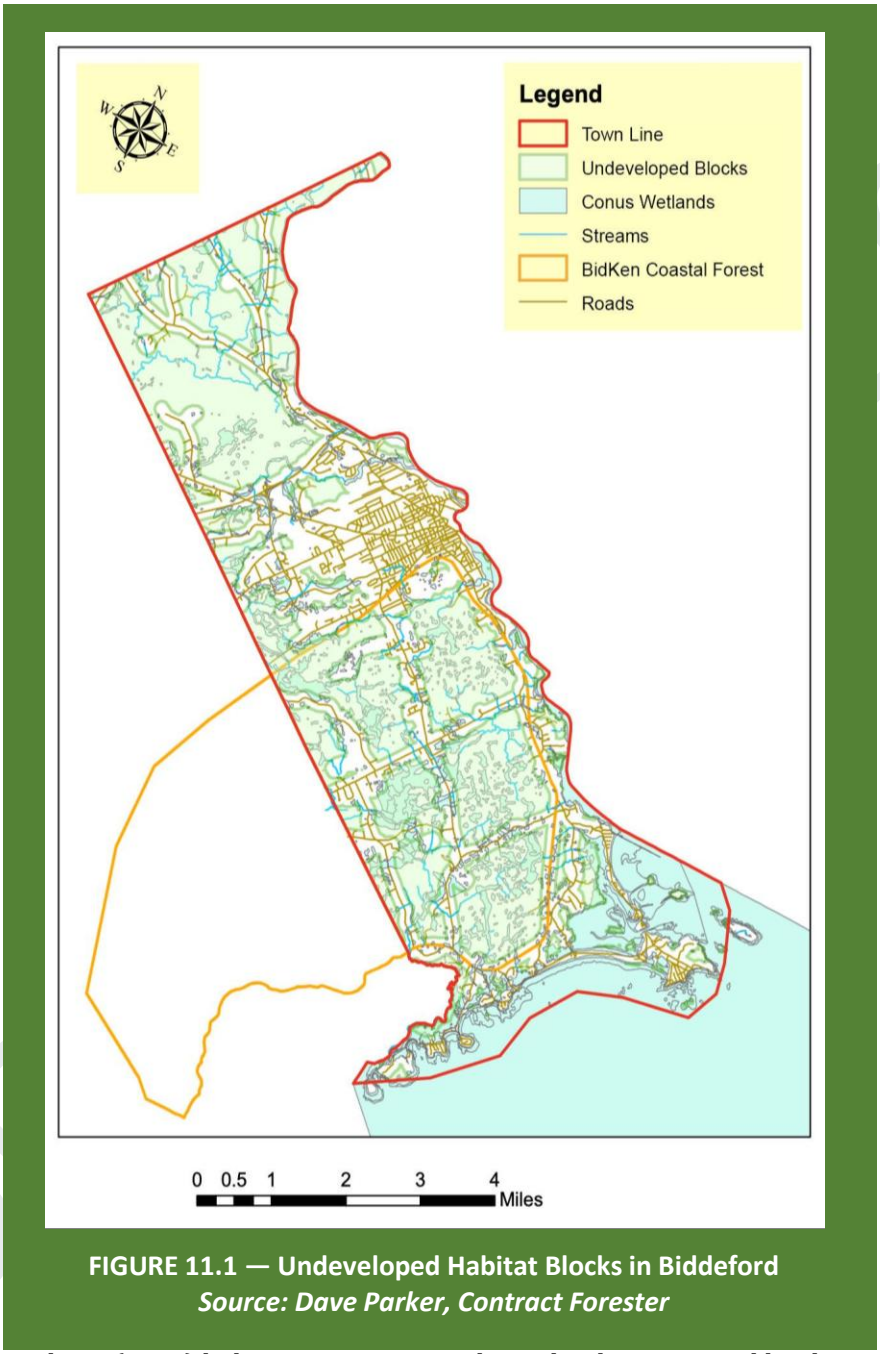


FIGURE 11.1 — Undeveloped Habitat Blocks in Biddeford
Source: Dave Parker, Contract Forester

Beginning with Habitat (BwH) helps Maine municipalities, landowners, and land trusts build habitat conservation into their long-term plans. Their data show that Biddeford is home to a wide range of wildlife and habitats.

Biddeford's unique location and availability of undeveloped forest form an important "stepping stone" for wildlife in a region of Maine that is densely developed. This allows wildlife to move between habitats throughout their seasonal migrations and provides areas to feed, reproduce, and seek shelter.

The habitats found throughout Biddeford, specifically in the Biddeford/Kennebunkport Coastal Forest (BKCF), are one of the largest habitat blocks remaining east of the I-95 highway in southern Maine. The BKCF is designated by BwH as a Focus Area of Statewide Ecological Significance.

FIGURE 11.2 — Large Forest Block in Western Biddeford (> 1500 acres)
Source: Cover-type analysis performed by contractor Mark Ward

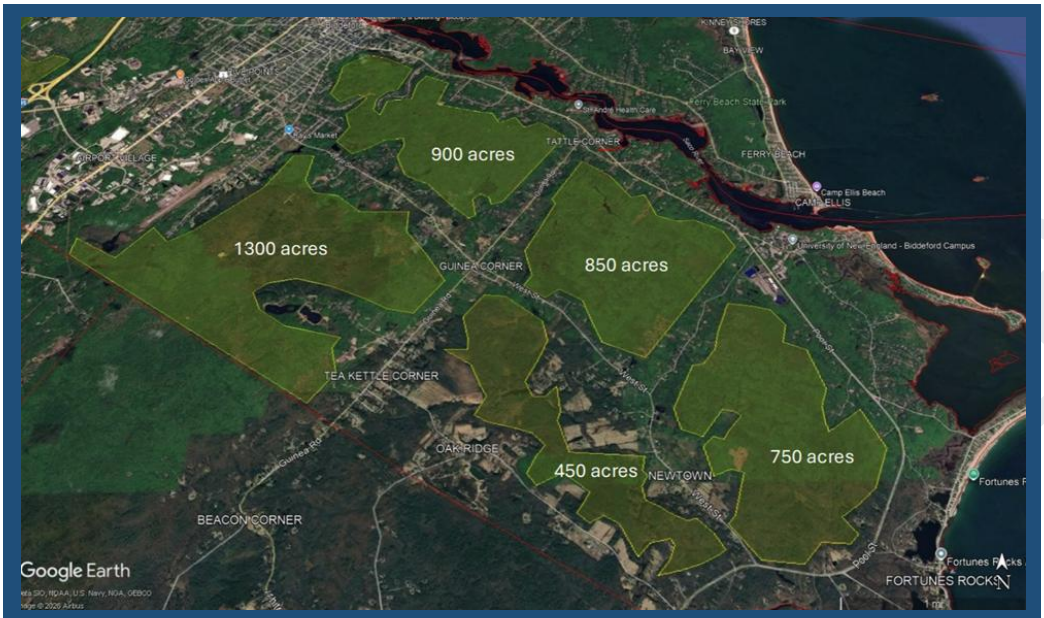


FIGURE 11.3 — Large Forest Block in Eastern Biddeford (> 3000 acres)
Source: Cover-type analysis performed by contractor Mark Ward

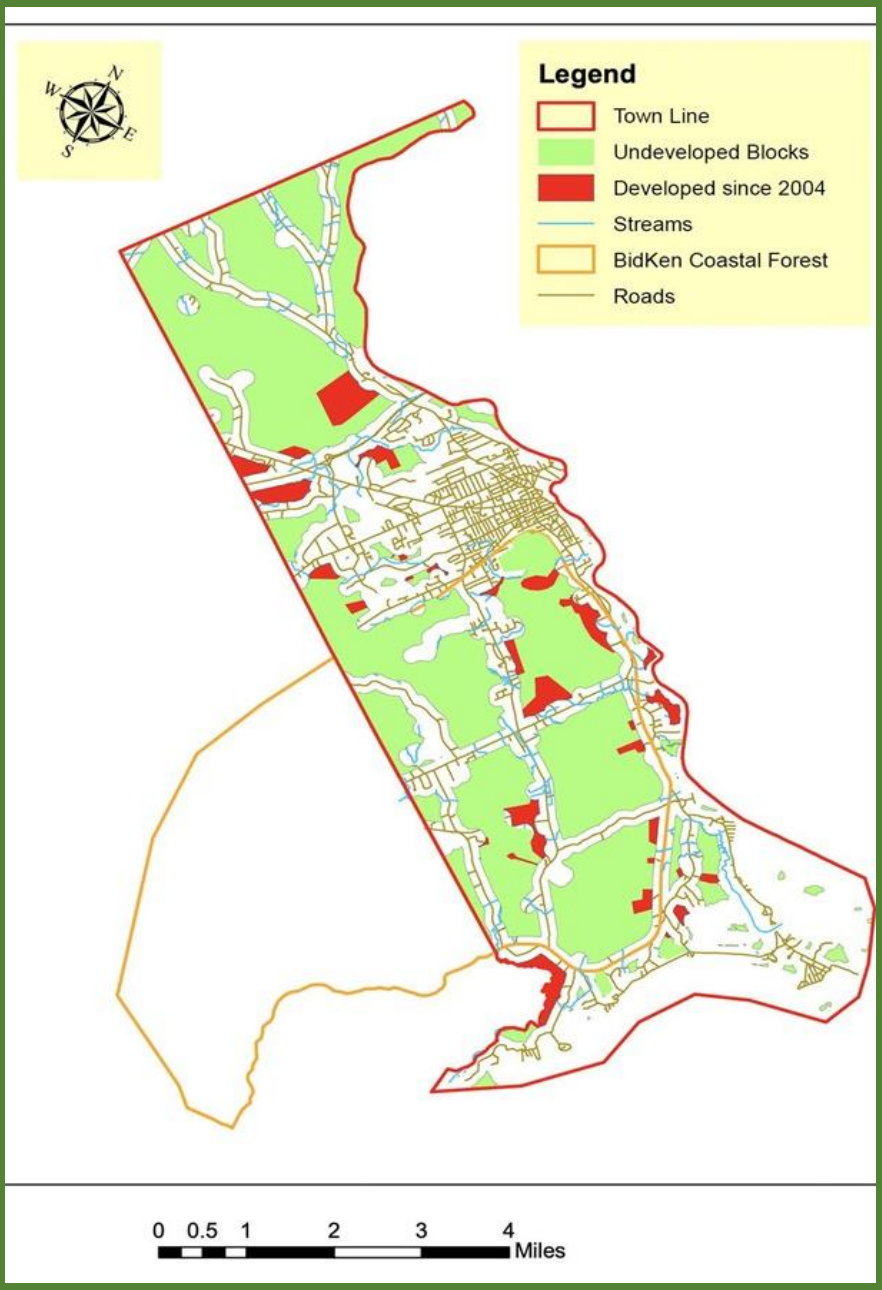


FIGURE 11.4 — Undeveloped Habitat Block Reductions (20-year period)
Source: Dave Parker, Contract Forester, with data from Wells Reserve

4. Focus Areas & Natural Communities

BwH Focus Areas of Statewide Ecological Significance contain several rare and/or endangered plants or animals as well as their habitats.

These focus areas are large enough to maintain a diverse population of species, and are identified by biologists from the Maine Department of Inland Fisheries and Wildlife (MDIFW), the Maine Natural Areas Program (MNAP), Maine Department of Marine Resources (DMR), U.S. Fish and Wildlife Service (USFWS), The Nature Conservancy (TNC), Maine Audubon, and Maine Coast Heritage Trust (MCHT).

4.1 Biddeford/Kennebunkport Coastal Forest

FIGURE 11.5 — Coastal Forest with Undeveloped Habitat Blocks
Source: Beginning with Habitat, Interactive Map Viewer

Biddeford/Kennebunkport Coastal Forest Focus Area (BKCF)

The following information regarding the BKCF is adapted from BwH resources.
Established around 2010, the Biddeford/Kennebunkport Coastal Forest (formerly known as the Biddeford/Kennebunkport Vernal Pool Complex) is a focus area of statewide ecological significance that covers roughly 16,000 acres. This focus area includes a significant portion of eastern Biddeford.

The biological significance of this area is due to a specific set of geological and soil features, and a high concentration of pocket swamps and vernal pools in undeveloped forested areas, which are becoming increasingly rare in Maine, and are seeing increased development pressure within Biddeford.

Protection Status

A number of individual parcels held by Maine Coast Heritage Trust, Saco Valley Land Trust, and the Blandings Wildlife Preserve provide some conservation protections within this critical habitat area, but this piecemeal approach does not prevent habitat fragmentation in the BKCF. The Biddeford Conservation Commission is actively pursuing conservation strategies to provide more holistic protection for this critical natural resource.

Conservation Considerations for the Focus Area

Preserving natural communities and other sensitive features can be best achieved by maintaining the integrity of the larger natural systems in which these features occur. Conserving the larger systems helps ensure both common and rare natural features will persist in this part of the state.

Some ways this can be achieved include:

- Minimizing habitat fragmentation through cluster mandates in zoning ordinances
- Reducing allowable net density in areas zoned Rural Farm or Conservation Overlay
- Increasing funding for permanent land conservation
- Creation of critical resource zoning overlay districts to prevent, minimize, mitigate, or compensate for disturbance to large unfragmented habitat blocks or wildlife corridors
- Re-evaluation of legacy Mobile Home Overlay Zoning in natural resource areas
- Using Best Management Practices for forestry and logging, especially near wetlands, headwaters, and vernal pools, to help prevent erosion and habitat loss

- Enhancing landowners' and motorists' awareness of species habitat, such as "turtle crossing" signs, while also working to replace culverts and install wildlife crossings or barriers that keep at-risk species away from roadways

4.2 Natural Communities & Wildlife Habitats

Biddeford is home to a diverse range of wildlife, birds, fish, and invertebrates. We are currently ranked 6th (out of all Maine municipalities) for the number of species listed as significant, threatened, or endangered.

STATE RANKING — KEY
S1 = Critically Imperiled
S2 = Imperiled
S3 = Vulnerable
S4 = Apparently Secure
S5 = Secure

Table 11-1: Habitat Types and Natural Communities

Name	Group	State Rank
Roseate Tern Nesting Area	Essential Wildlife Habitats	n/a
Piping Plover-Least Tern Nesting, Feeding, & Brood-Rearing Area	Essential Wildlife Habitats	n/a
Inland Waterfowl & Wading Bird	Significant Wildlife Habitats	n/a
Tidal Waterfowl & Wading Bird	Significant Wildlife Habitats	n/a
Significant Vernal Pools	Significant Wildlife Habitats	n/a
Seabird Nesting Islands	Significant Wildlife Habitats	n/a
Oak - Hickory Forest	Rare & Exemplary Natural Communities	S1
Pocket Swamp	Rare & Exemplary Natural Communities	S2

Salt-Hay Saltmarsh	Rare & Exemplary Natural Communities	S3
Brackish Tidal Marsh	Rare & Exemplary Natural Communities	S3
Freshwater Tidal Marsh	Rare & Exemplary Natural Communities	S2
Pitch Pine Bog	Rare & Exemplary Natural Communities	S2
Pitch Pine Woodland	Rare & Exemplary Natural Communities	S3
Coastal Dune-Marsh Ecosystem	Rare & Exemplary Natural Communities	S3
Red Maple Swamp	Exemplary Common Natural Communities	S4S5

Source: Natural Resources Inventory, Beginning with Habitat, MDIFW (Sept. 2025)

5. Wildlife

Table 11-2: Rare Animals, Plants, and Natural Communities in Biddeford

Name	SOURCE	State Rank	State Status
Arrowhead Spiketail	ETSC Animals	S1	Special Concern
Dusted Skipper	ETSC Animals	S1S2	Special Concern
Eastern Ribbonsnake	ETSC Animals	S3	Special Concern
Great Blue Heron	ETSC Animals	S4B	Special Concern
Purple Sandpiper	ETSC Animals	S4S5N	Special Concern
Harlequin Duck	ETSC Animals	S2S3N	Threatened
Peregrine Falcon	ETSC Animals	S1S2N, S2B	Endangered
Piping Plover	ETSC Animals	S2B	Endangered
Saltmarsh Sparrow	ETSC Animals	S1B	Endangered
Spotted Turtle	ETSC Animals	S3	Threatened
Wood Turtle	ETSC Animals	S4	Special Concern
Blanding's Turtle	ETSC Animals	S2	Endangered
Southern Pygmy Clubtail	ETSC Animals	S1S2	Special Concern
Lilaeopsis	MNAP Plants	S2	Special Concern
Smooth Winterberry Holly	MNAP Plants	S3	Special Concern

Beach Wormwood	MNAP Plants	S1S2	Special Concern
Estuary Bur-marigold	MNAP Plants	S3	Special Concern
Hollow Joe-pye Weed	MNAP Plants	S2	Special Concern
Dwarf Glasswort	MNAP Plants	S1	Threatened
American Sea-blite	MNAP Plants	S2	Threatened
Sweet Pepper-bush	MNAP Plants	S2	Special Concern
Pygmyweed	MNAP Plants	S2S3	Special Concern
Water Pimpernel	MNAP Plants	S3	Special Concern
Beach Plum	MNAP Plants	S1	Endgangered
Saltmarsh False-foxglove	MNAP Plants	S3	Special Concern
Mudwort	MNAP Plants	S3	Special Concern
Spongy-leaved Arrowhead	MNAP Plants	S3	Special Concern
Stiff Arrowhead	MNAP Plants	S2	Special Concern
Button Sedge	MNAP Plants	S2	Special Concern
Parker's Pipewort	MNAP Plants	S3	Special Concern
Horned Pondweed	MNAP Plants	S2	Special Concern

Source: Natural Resources Inventory, Beginning with Habitat, MDIFW (Sept. 2025)

Rare Plants in Maine, Maine Natural Areas Program (online)

5.1 Wildlife & Habitat Cooccurrence

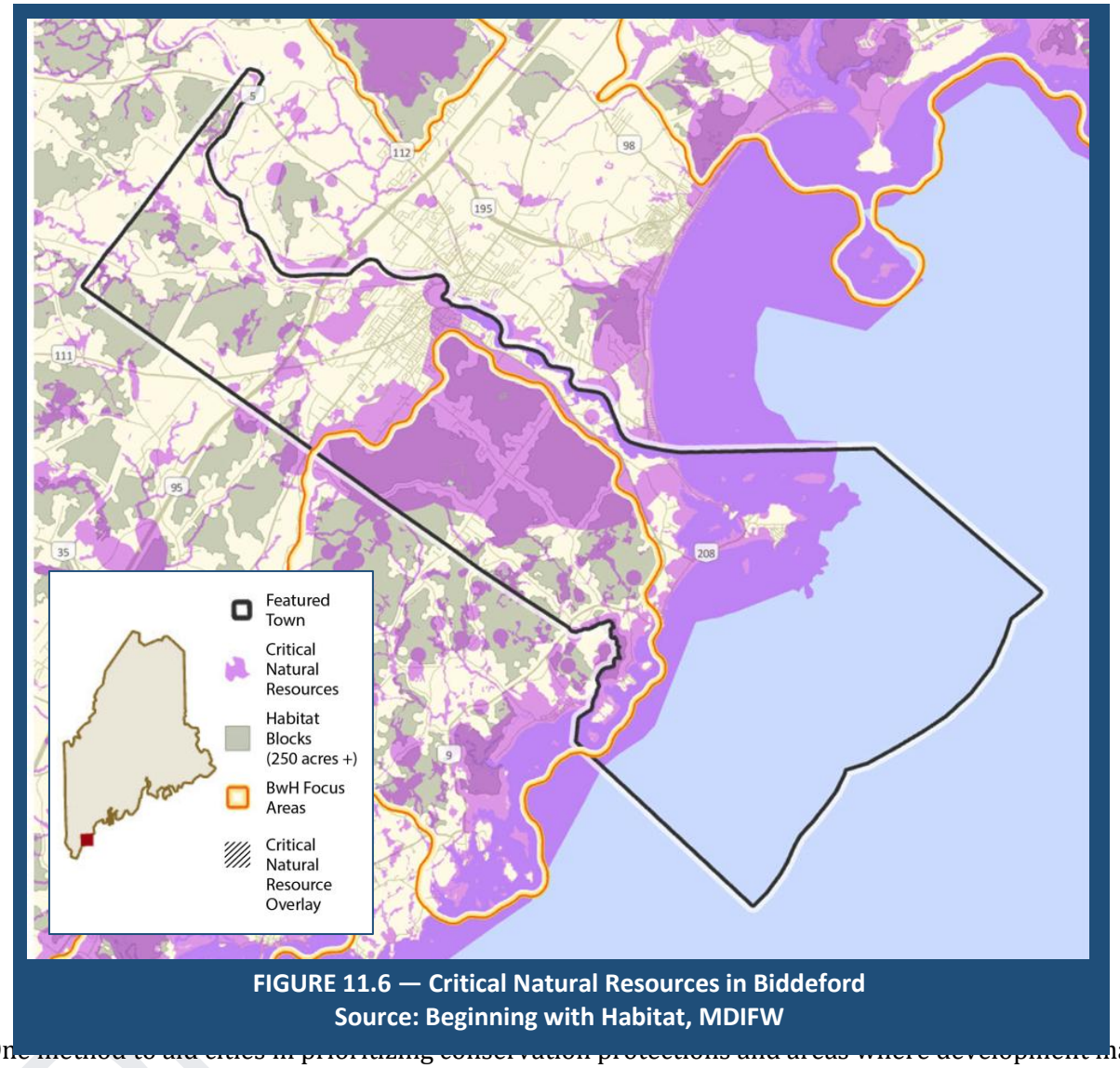


FIGURE 11.6 — Critical Natural Resources in Biddeford
Source: Beginning with Habitat, MDIFW

One method to aid cities in prioritizing conservation protections and areas where development may have greater environmental impacts is to identify areas where multiple species of concern and environmental assets are co-located in the same area.

The undeveloped habitat blocks that exist within the Biddeford/Kennebunkport Coastal Forest align with the highest concentration of natural resources and at-risk wildlife species in Biddeford.

These areas include rare plants, threated/endangered species, wetlands, and rare/exemplary natural communities.

This supports the need for two (2) Critical Natural Resources overlay areas (FIG 11.7) to protect these natural resources as they continue to see increased development pressures based on outdated zoning ordinances that do not align with our City's natural resource protection goals.

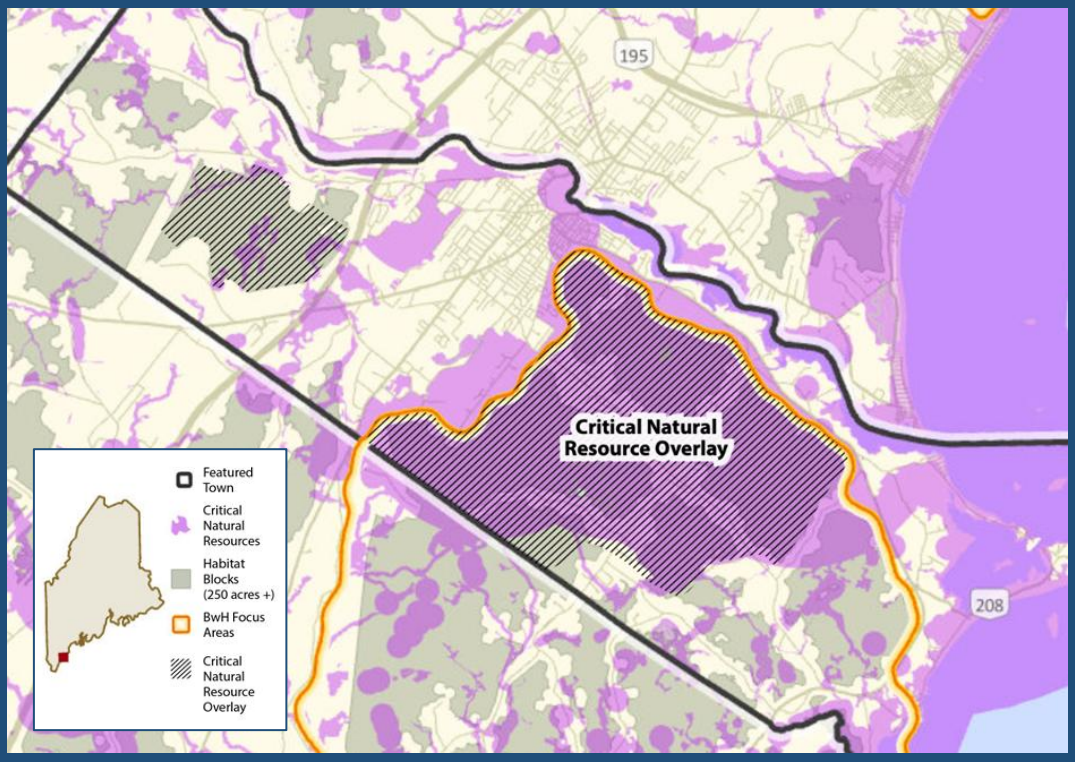


FIGURE 11.7 — Critical Natural Resources in Biddeford
Source: Beginning with Habitat, MDIFW

Represented within the Critical Natural Resource areas are:

- 2 or more acres of >20% slope (USGS)
- 2 or more acres wetland within SLZ (National Wetlands Inventory/NWI)
- Wetlands of Special Significance (NWI, USGS, MDIFW)

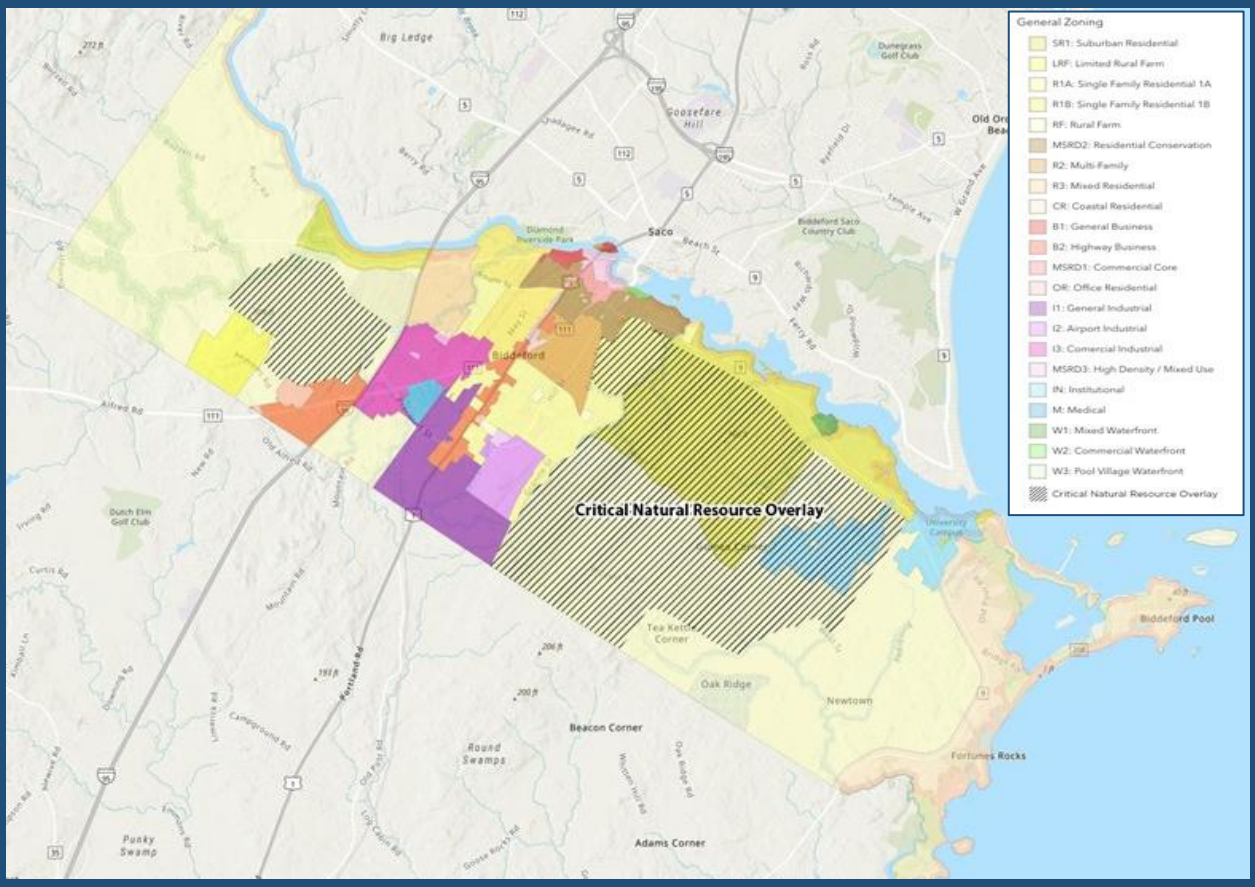


FIGURE 11.8 — Zoning Map with Critical Natural Resources Overlay
Source: Biddeford GIS Maps (Zoning Map w/ suggested overlay)

6. Vernal Pools

FIGURE 11.9 — An egg mass in one of Clifford Park's vernal pools (circa 2023)
Photo: Erik Heumiller

While the State of Maine defines a Vernal Pool as "*Any natural water body that holds water long enough in a typical year to support breeding fairy shrimp, wood frogs, and/or spotted or blue-spotted salamanders.*" — it also acknowledges that, "*While vernal pools are typically natural landscape features, occasionally anthropogenically created or modified water bodies such as abandoned gravel pits, can function as important vernal pool breeding habitat as well.*"

Vernal Pools act as a "grocery store" within forested areas, serving as an important resource for wildlife communities. Pools provide services beyond habitat, including massive nutrient exchange (14% of our forest nitrogen comes from wood frogs alone*), groundwater recharge, and flood prevention.

As important as the vernal pools are, the upland areas surrounding them are equally important to seasonal habitat needs of the wildlife that rely on them. Connectivity of vernal pools, wetlands, and upland areas surrounding them needs to be considered in conservation planning.

Source: *Beginning with Habitat, MDIFW, 2025

7. Deer Wintering Areas

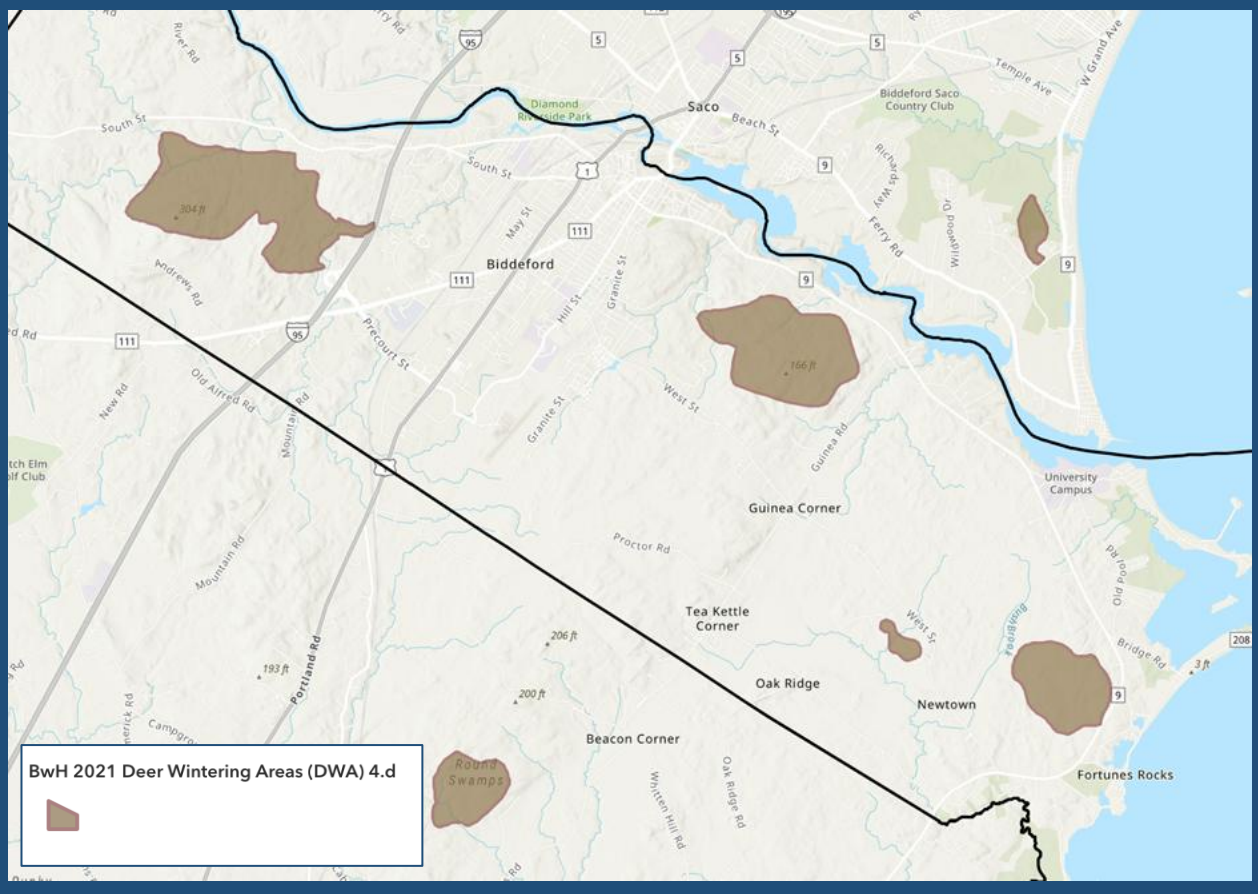


FIGURE 11.10 — Deer Wintering Areas
Source: Wildlife Habitats Map, Biddeford GIS Map Gallery

scarce Winter conditions. These are known as "deer wintering areas" or "deer yards," of which Biddeford has historically documented multiple locations.

To reduce roadway collisions and mortality during the winter, these areas should be prioritized when considering habitat conservation and other means of preserving open space within the development of private parcels. Wildlife-vehicle collisions cost Mainers #134 million annually.*

Shelter conditions typically include:

- **Conifer Forests** that contain Hemlock, Pine, and Cedar. These provide thermal cover by blocking wind, preventing snow accumulation, and by absorbing heat from the sun.
- **Southern Slopes & Valleys** are often warmer due to the southern sun exposure and tend to see less snow accumulation.

Energy conservation and food sources typically include:

- Woody plants (twigs, stems), which are often readily available.
- Tree nuts (acorns, etc.) that remain accessible may also be forage opportunities.
- Deer are typically less active in the winter to conserve energy, often relying on reduced metabolism and fat reserves to survive on a limited diet. However, the availability or lack of food sources during the Fall can drive them in search of food if their fat reserves are not sufficient to sustain them.

* Based on data from Maine DOT 2018-2022 "Collisions Between Wildlife Species and Motor Vehicles" Report

8. Riparian Habitats, Watersheds, and Wetlands

Biddeford's water uses reflect the city's strong connection to the Saco River along with its coastal shoreline, groundwater resources, and network of vernal pools, wetlands, and estuaries. The City's rivers and streams include the Saco River Watershed, and ten (10) sub-watersheds.

It's important to recognize the interconnectedness of these habitats and how they support fish, waterfowl, and wildlife populations as well as other natural resources throughout Biddeford.

The Water Resources and Marine Resources chapters provide additional information.

8.1 Riparian Habitats

The areas adjacent to, and surrounding, wetlands and streams, known as Riparian Habitat, are inextricably linked to many significant wildlife species for feeding, nesting, denning, or as travel corridors in Biddeford.

- Over 85% of Maine's vertebrate wildlife use riparian habitats at some point in their annual life cycle.
- Riparian habitats are often used as travel corridors between forested areas.
- Forested riparian zones are known to store large amounts of carbon and add to landscape-scale climate resilience.
- Forested riparian zones also reduce runoff and erosion risks by stabilizing the banks of rivers and streams.

The State of Maine maintains minimums of 100-foot "no cut" buffers, but also acknowledges that if opportunities exist to extend the "no cut buffer" distance, or to protect entire riparian habitats, there is a preference for those protections.

8.2 Watersheds and Fisheries

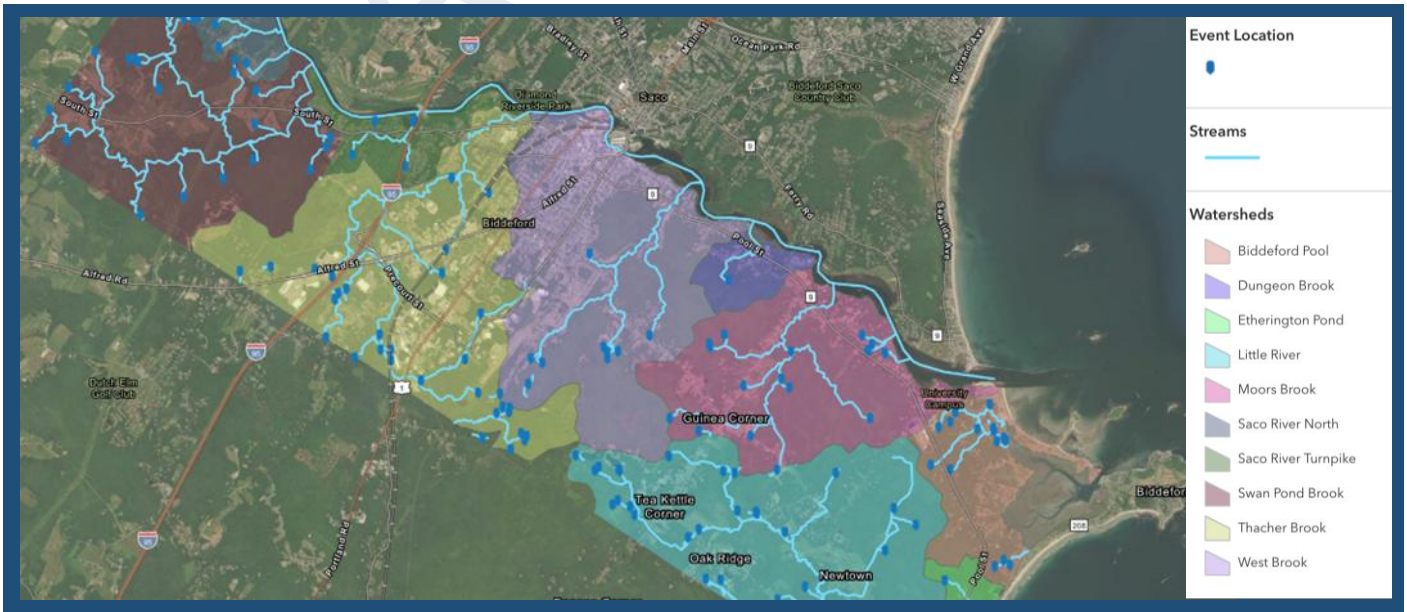
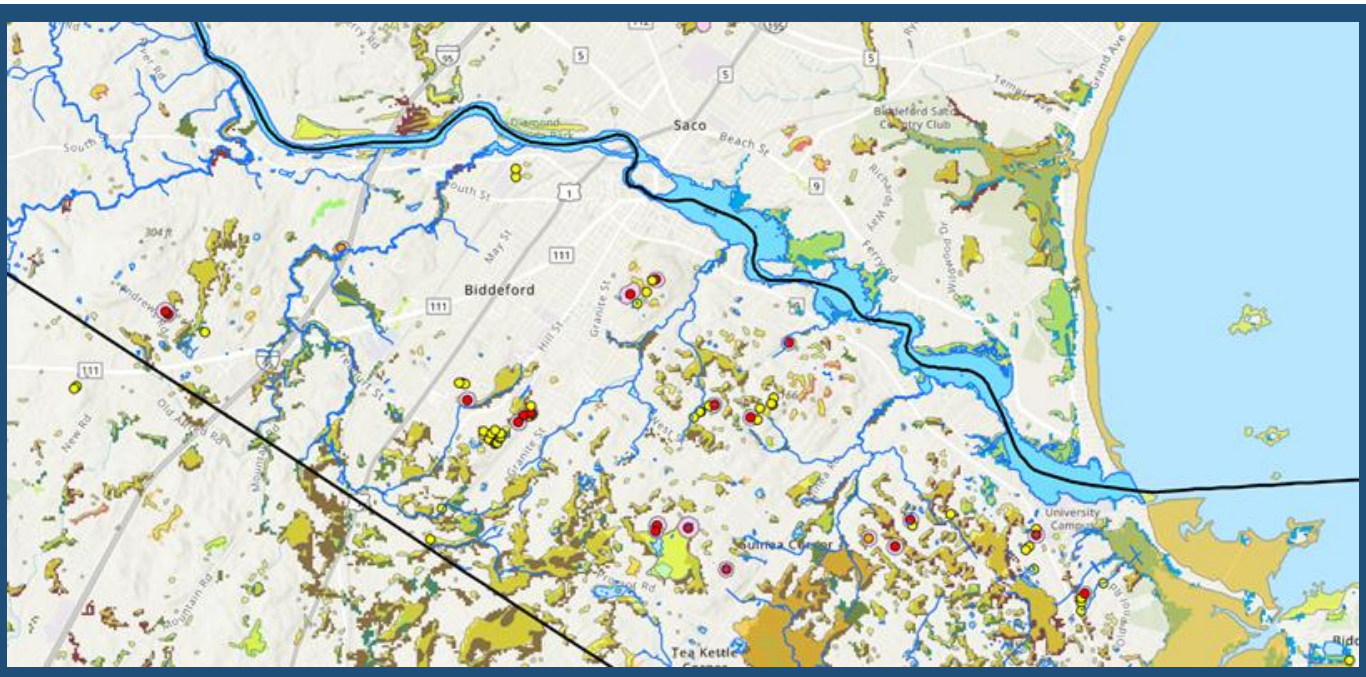


FIGURE 11.11 — Watersheds in Biddeford
Source: NEA Streams Data, Biddeford GIS Map Gallery

MDIFW has identified **Swan Pond Brook**, its tributaries, and two unnamed tributaries to the Saco River upstream from where Swan Pond Brook outlets into the Saco River as being likely brook trout and Atlantic salmon habitat. **The Little River** and its tributaries, including **Bush Brook**, are also identified as a likely brook trout habitat. These water bodies represent the characteristics conducive to brook trout: "clean, cool, well oxygenated water".

corridors that: conserve forest soils, provide shade to reduce stream warming, protect stream water quality, provide cover for fish, provide a source of woody debris and leaf litter from mature trees that maintain critical in-stream habitat for fish and the aquatic insects they feed upon (leaves provide the energy source that drives productivity in streams). Floodplain and fringe wetlands associated with streams are a significant source of springs and groundwater discharge that maintain stream flows and cool temperatures during warm, low-flow summer periods. Protection of these important riparian and wetland functions ensures that the overall health of stream habitat and watershed is maintained." —MDIFW Habitat Report; Swan Pond Brook

8.3 Wetlands & Marshes



BwH 2021 Maine NETHCS - Marsh and Swamp Land 3.a 3.b

- Acadian Coastal Salt and Estuary Marsh: Tidal
- Boreal-Laurentian Bog: Isolated/small stream
- Laurentian-Acadian Wet Meadow-Shrub Swamp: Isolated
- Laurentian-Acadian Wet Meadow-Shrub Swamp: Lake/pond: any size
- Laurentian-Acadian Wet Meadow-Shrub Swamp: Smaller river floodplain/riparian
- Laurentian-Acadian Freshwater Marsh: Isolated
- Laurentian-Acadian Freshwater Marsh: Lake/pond: any size
- Laurentian-Acadian Freshwater Marsh: Smaller river floodplain/riparian
- North-Central Appalachian Acidic Swamp: Isolated
- North-Central Appalachian Acidic Swamp: Lake/pond: any size
- North-Central Appalachian Acidic Swamp: Smaller river floodplain/riparian
- North-Central Interior and Appalachian Rich Swamp: Isolated
- North-Central Interior and Appalachian Rich Swamp: Lake/pond: any size
- North-Central Interior and Appalachian Rich Swamp: Smaller river floodplain/riparian

IF&W 2021 Vernal Pool Center Points 3.c

- Significant
- Potentially Significant
- Not Significant

IF&W 2021 Significant Vernal Pool Buffers 3.c

BwH 2021 Wetlands by Size 3.d.iii 3.d.iv

GISVIEW_MEIFW_wc_fxn_Apr07_AREA

- Under 10 Acres
- Over 10 Acres

BwH 2021 Aquifers

BwH 2021 Wildife Wetlands 3.d

FIGURE 11.12 — Wetlands and Wading Bird Habitat Source: Wetlands and Waterbodies, Biddeford GIS Map Gallery

mud and sand flats, as well as salt and brackish marshes. These areas provide vital habitat for wildlife and natural flood protection.

The mud flats of Biddeford Pool are comprised of sediment finer than sand, which is teeming with shellfish, worms, and other species that support both recreational and commercial harvesting, as well as attracting a variety of bird species.

Biddeford also has several notable inland waterfowl and wading bird habitat locations as mapped by MDIFW. These areas are fairly spread out through the town and are comprised mainly of larger freshwater wetlands.

9. Dunes and Shorelands

Sand dune systems are dynamic landforms of sand and gravel created by wind and water action. They include various features like beach berms, frontal dunes, and back dunes — and they serve as natural barriers against storms while providing vital habitat

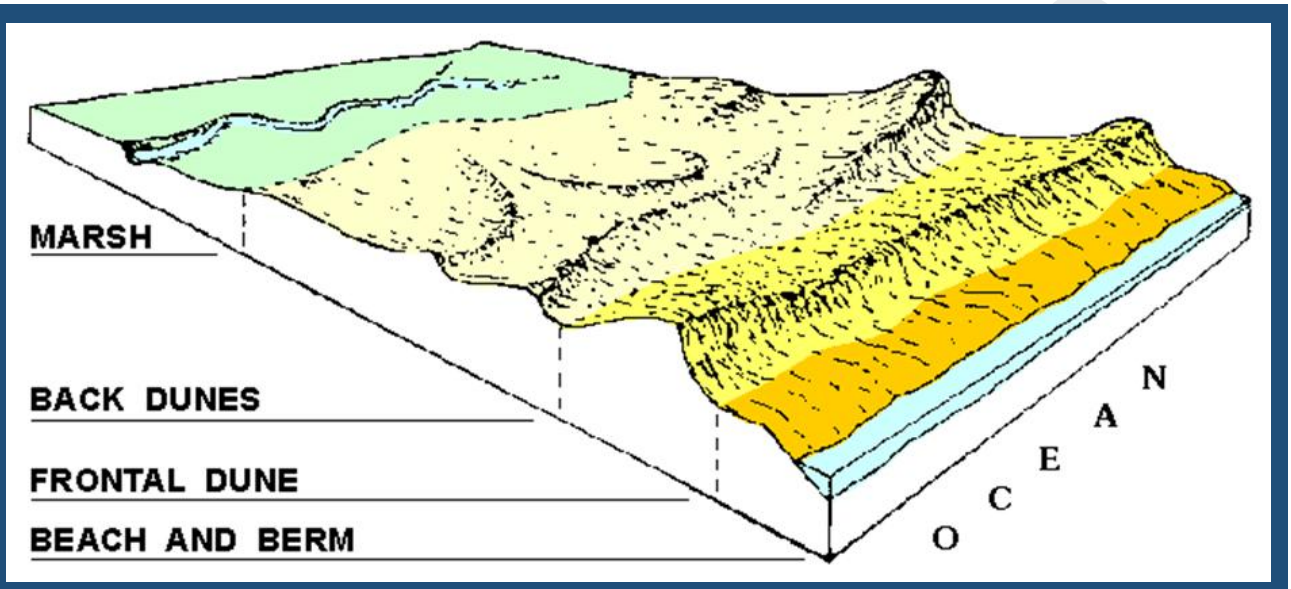


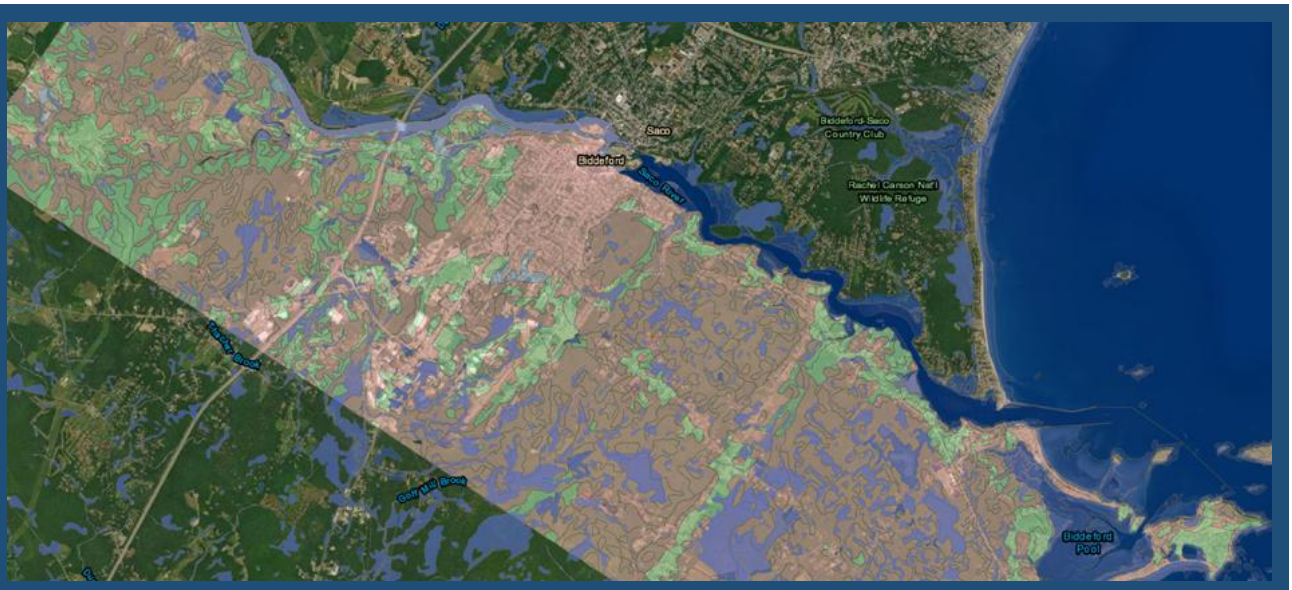
FIGURE 11.13
Source: Maine Department of Agriculture, Conservation, and Forestry; Maine Geological Survey

Dune formation and maintenance depend on a constant supply of sand and the stabilization provided by vegetation like dune grass.

According to the Maine Geological Society, there are generally seven (7) sand dune systems located within the City of Biddeford, as follows:

1. Hills Beach
2. Hills Beach – Fort Hill
3. Mile Stretch Beach
4. Fortunes Rocks Beach
5. Horseshoe Cove
6. New Barn Cove Beach
7. Curtis Cove Beach

10. Soils



Biddeford National Wetland Inventory

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Scrub Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine
- Other

Soils_at_a_glance - Biddeford Soils At-a-Glance - Farmland

- Farmland of statewide importance
- All areas are prime farmland
- Not prime farmland

FIGURE 11.14 — Soils Maps
Source: Biddeford Parcels and Soils, Biddeford GIS Map Gallery

Prime agricultural soils, whether forested or in active agricultural use, are a vital natural resource within Biddeford. Much of the prime soil acreage throughout Biddeford has already been developed; therefore, drastically reducing what was historically available.

The qualities of these soils are not something easily replicated, and as such, the City should prioritize protections for these soils to ensure local food availability, agricultural viability, and other resiliency measures.

The Agricultural & Forest Chapter provides additional information.

11. Scenic Resources

Scenic resources within a community are attributes that give communities identity and make them appealing places to live. These resources may be specific, extraordinary views, or they may be vistas of segments of the community, such as traditional working rural landscapes, village centers, or historic districts.

The City of Biddeford is fortunate to have a diversity of geographical landscapes within the City's boundaries, including beaches, open areas, islands, harbors, tidal flats, wetlands, historical resources, and village centers.

Table 11-3: Biddeford's Scenic Resource Inventory

Area	Description	Usage
Clifford Park & Trail System	A forested trail network maintained by Public Works and the Recreation Department. Portions of the park contain a conservation easement held by MCHT.	Hiking, dog walking, mountain biking, wildlife photography. No motorized vehicles, camping, or fires permitted
Rotary Park	A riverfront park system with walking trails, sports fields, and a beach. The park contains a significant amount of Japanese Knotweed (invasive species) and visitors should take care not to transport it elsewhere.	Skateboarding, walking, dog walking, frisbee, sports fields, swimming, and other recreational opportunities
Biddeford Forest	Conservation land established on Maine Water company property to preserve forested habitat.	Nature preserve
Biddeford Pool	Tidal mud flats that include a boat launch and scenic salt marshes that provide habitat, rearing, and feeding areas for a variety of birds and waterfowl. The Pool also provides recreational and commercial clam harvests.	Sightseeing, commercial and recreational clamming, paddle sports
Maine Audubon East	Coastal habitat preserve with walking	Hiking, bird watching,

Point Sanctuary	trails and a few benches.	fishing
Rachel Carson Wildlife Refuge	Protected habitat areas along the coastal regions of Biddeford.	Nature preserve
Blandings Park Wildlife Sanctuary	A patchwork of parcels held in conservation to create a wildlife preserve.	Nature preserve, hiking
Wood Island Harbor and various neighboring islands	This area sees an array of migratory birds and waterfowl throughout the year, and is utilized by recreational and commercial fishing boats.	Nature preserve, boating
Wood Island Lighthouse	Wood Island Lighthouse sits on a 32-acre island that is currently uninhabited. The island is only reached by boat or paddle craft, with tours being offered during the summer months.	Nature preserve, sightseeing
Timber Point	This 97-acre peninsula and 13-acre island are a well-known landmark in the region. A 1.4-mile loop of walking trails exposes visitors to salt marshes, mixed forests, sandy coves, and coastal shores — all teeming with wildlife.	Nature preserve, walking, bird watching, fishing
Hills Beach	A roughly 1-mile, narrow stretch of sandy beach on the north side of Biddeford Pool. The beach runs from the Saco River jetty to the Biddeford Pool harbor entrance.	Public beach
Fortunes Rocks	A 2-mile stretch of sandy beach bordered by salt marsh and fresh-water ponds and the ocean.	Public beach
Fortunes Rocks Cove, New Barn Cove, Curtis Cove, and Horseshoe Cove	A series of coves along Biddeford's southern coast. These provide critical coastal habitat for wildlife.	Private beach

Saco River & Riverwalk	The Saco River is a core feature of downtown Biddeford, as well as a critical water resource and fisheries habitat. The Riverwalk provides access to areas of the river and points of connection to the City of Saco.	Walking, sightseeing
Farmlands and open areas	Working landscapes, fields, pastures, and orchards provide habitat that contrasts with developed areas. These areas not only support local food systems but also enhance quality of life and foster a sense of place.	Agriculture, habitat, commerce

Biddeford's scenic resources are highly valued not only for their aesthetic appeal, but for the natural character and connected ecosystems they preserve in our city.

These areas often sit at the junction of habitat, recreation, and tourism — requiring the City to balance the needs of each in protecting and maintaining these regions.

12. Regional Cooperation on Natural Resource Protection

Wildlife and habitat do not exist within the lines drawn on maps, and as such, the need for regional cooperation and collaboration on land use, connectivity, and acquisition strategies between Biddeford and surrounding communities is critical to the protection of our natural resources. The City may work with governmental agencies, nonprofit organizations, and private landowners to pursue protections for wildlife habitat, soils, and other critical natural resources.

Some organizations and initiatives include:

- Saco Valley Land Trust
- Maine Coast Heritage Trust
- Maine Audubon
- Blandings Wildlife Preserve
- The Nature Conservancy (TNC)
- Maine Dept. of Environmental Protection
- Saco River Corridor Commission
- Saco Salmon Restoration Alliance
- Saco Watershed Collaborative

Land trusts are instrumental in permanently preserving land and water resources. These organizations act as monitors and managers of land to ensure development restrictions on conservation parcels are enforced, and they often maintain trails and other opportunities for public access, education, and other recreational opportunities — while ensuring our natural resources persist for future generations.

13. Further Analysis

13.1 Threats to Natural Resources

- Human impact and disturbance through commercial, residential, or recreational uses
- Reduction and fragmentation of habitat by development, roads, parking lots, etc.
- Inappropriate zoning designations that conflict with natural resource protection goals
- Lack of habitat identification before development
- Deforestation or over-harvesting of resources
- Point and non-point source pollution (runoff)
- Degradation of water quality (increased temperatures, lack of canopy cover, etc.)
- Invasive species (insects, crabs, etc.)
- Invasive plants (knotweed, bittersweet, etc.)
- Increases in precipitation and climate events (flooding, erosion)
- State-wide policy changes from new administrations and legislators can upend long-term conservation and natural resource protections, and as such, the City of Biddeford should work to develop ordinances and zoning that don't rely on state-mandates and policies

13.2 Specific threats to identified resources:

Threats to Wetlands

Land use development and human impact can result in the loss or degradation of wetlands, which can lead to impacts such as increased flooding, extinction of species, and decline in water quality. Untreated runoff from agricultural lands, urban areas, and other sources into wetlands can result in changed species composition, increased pollutant loadings, and replacement of complex wetland systems with open water. Land use development projects should be managed carefully to avoid these threats.

Threats to Vernal Pools

Land use development and human impact can result in the loss or degradation of vernal pools, including the upland areas around vernal pools that are necessary for parts of the lifecycle of many rare, threatened, and endangered species that rely on vernal pools. Land use development projects should be evaluated carefully to avoid these threats.

Threats to Thatcher Brook Watershed

The Thatcher Brook Watershed Management Plan (TBWMP) 2015-2025, has identified the following threats to the water quality of the brook:

Thatcher Brook is listed as an Urban Impaired Stream in MDEP's Chapter 502. A stream is considered "urban impaired" if it fails to meet state and federal water quality classifications due to the effects of stormwater runoff from impervious surfaces such as rooftops, parking lots, and roads.

During the development of this Plan, the following threats to water quality (a.k.a. stressors) were identified:

- Stream channel alteration and the resulting stream bank erosion and degraded habitat;
- Elevated phosphorus and decreased dissolved oxygen [DO] (in part due to naturally-occurring conditions in associated wetlands); and,
- Elevated bacteria and specific conductance.

Additional monitoring and updates to the TBWMP are necessary to continue efforts to reduce runoff impacts and improve water quality.

Threats to Deer Wintering Areas

New development and other modifications to the habitat within traditional deer wintering areas reduce the overall ability of an area to support deer during periods of severe winter weather. The more development that occurs within these areas, the greater the potential impact on local deer populations. The availability of high-quality winter range allows a higher winter population of deer, and enables them to more fully occupy their summer habitat.

However, one type of land use that is essential for deer wintering area management is timber harvesting. According to IFW, the general goal in managing deer wintering areas is to maintain approximately 50% of the area in mature conifer forest types. This allows each landowner in the deer wintering area to harvest as much as 20% of the total timber volume on his/her ownership in any 15-year period. Non-permanent, minimal disturbance (light or no bulldozing and no graveling of the travel surface) roads are recommended by IFW when a land management road must be located in a deer wintering area to allow access for timber harvesting.

Threats to Sand Dune Systems

Coastal geological processes such as wind, waves, tides, currents, and coastal hazards such as storm surge, sea level rise, erosion, and inlet migration will all inevitably shift the locations and decrease the size of sand dune systems located within Biddeford. Coastal flooding and erosion can destroy improperly located structures on beaches and sand dunes. Winter northeaster storms striking during high tides cause the most serious beach and dune erosion.

Continuing natural movement of the beach and perhaps more abrupt shoreline changes caused by major coastal storms or an acceleration of sea level rise make some areas unsuitable for coastal development. Structures should be placed in locations that have minimal interference with natural geologic processes and are in areas with low risk from natural hazards.

Natural Resources –

What Comes Next?

TIMELINE — KEY
1 = Immediate (0-1 yr)
2 = Near-term (1-3 yrs)
3 = Medium-term (3-6 yrs)
4 = Long-term (6-10 yrs)
Ongoing = Indicates a strategy will take many years or continuous work for implementation.

Many of Biddeford's goals align with goals the State of Maine is pursuing, and when applicable, the City can benefit from shared alignment and resources provided by the State.

State Goals			
Goal 1	Healthy Fish and Wildlife Habitats: Partner with the public to achieve shared goals for sustainability, and both maintaining and improving healthy fish and wildlife populations and habitats, despite environmental changes and shifts in land ownership.		
Policy 1	Collaborate with BwH, MDIFW, and other organizations to enact habitat protections.		
Strategy 1a	The City shall request state agency review for all developments in critical natural resource areas (FIG 11.8) to coordinate land-use decision-making with local and regional goals. Agencies include but are not limited to the Maine Department of Environmental Protection (DEP), Maine Department of Inland Fisheries and Wildlife (IFW), Maine Natural Areas Program (MNAP), and others.	Ongoing	Planning & Development Dept., Planning Board
Strategy 1b	Collaborate with IFW's Beginning with Habitat Program to aid in the development of conservation planning, the development of overlay zoning, natural resource inventories, and/or other habitat protection programs to prioritize wildlife corridors and vernal pools.	1	Conservation Commission, Planning Board

TIMELINE — KEY
1 = Immediate (0-1 yr)
2 = Near-term (1-3 yrs)
3 = Medium-term (3-6 yrs)
4 = Long-term (6-10 yrs)
Ongoing = Indicates a strategy will take many years or continuous work for implementation.

Biddeford's Goals	
Goal 1	To protect, maintain, and, where possible, improve the quality of the City's natural environment and resources. This goal is in alignment with the State's goal: *To increase, by 2030, the total acreage of conserved lands in the state to 30% through voluntary, focused purchases of land, and working forest/farm conservation easements. Increasing carbon*

	storage in our natural and working lands to offset carbon emissions and impacts from climate change. Source: Maine Climate Action Plan, 2025		
Policy 1	To conserve critical natural resources in the community.		
Strategy 1A	Ensure that land use ordinances are consistent with applicable state law regarding important natural resources.	Ongoing	Planning & Development Dept., Planning Board
Strategy 1B	The City shall designate critical natural resources as Critical Resource Areas in the Future Land Use Plan.	1	Planning & Development Dept., Planning Board
Strategy 1C	The City shall review and upgrade its enacted Zoning Ordinances, which were conceived to protect and preserve the quality of local surface water and wildlife habitats, to A) develop new ordinances, zoning updates, overlay zones, and incentive programs to reduce development pressures in critical natural resource areas, B) prioritize projects with greater-than-minimum buffers, increased open space preservation, and wildlife habitat connectivity, and C) ensure development proposals identify critical natural resources that may be on-site and to take appropriate measures to protect those resources, including but not limited to, modification of the proposed site design, construction timing, and/or extent of excavation.	2	Planning & Development Dept., Planning Board, Conservation Commission
Strategy 1D	Amend the Zoning Ordinance to ensure the Planning Board (or its designee) includes as part of the review process, consideration of pertinent BwH maps and information regarding critical natural resources.	1	Planning & Development Dept., Planning Board
Strategy 1E	Evaluate the Cluster Subdivision and Net Density Performance Standards in the Zoning Ordinance for their effectiveness and value with respect to protecting important natural resources, exploring options/programs that include, but are not limited to: A) Reducing allowable net density in Rural Farm or Conservation Overlay zoned areas, B) Development Rights Transfer,	2	Planning & Development Dept., Planning Board, Conservation Commission

	C) Development Transfer Fee, and D) Conservation & Limited Development Projects (CLDP)		
Strategy 1F	Revise the Wildlife Preservation Performance Standards to ensure that through the review of development proposals, wildlife preservation requirements are clear and practical.	Ongoing	Planning & Development Dept., Planning Board, Conservation Commission
Strategy 1G	Explore other regulatory means to protect important natural resources to the greatest extent practicable.	Ongoing	Planning & Development Dept., Planning Board, Conservation Commission
Strategy 1H	Pursue public/private partnerships to protect critical and important natural resources, such as through the purchase of land or easements from willing landowners.	Ongoing	Planning & Development Dept., Conservation Commission
Strategy 1I	Distribute or make available information about current use tax programs and applicable local, state, or federal regulations to those living in or near critical and/or important natural resource areas.	1 Ongoing	Conservation Commission
Strategy 1J	The City may create a "no development, other than timber harvesting" ordinance that will protect all of the City's deer wintering areas (as designated by the Maine Department of Inland Fisheries & Wildlife).	2	Policy Committee, Planning Board, City Council, Conservation Commission
Strategy 1K	Conduct bi-annual reviews of development growth, evaluating impacts on natural resources, to be reviewed as part of a zoning ordinance review process. This includes, but is not limited to: A) increase/decrease of habitat, B) habitat fragmentation, and C) development "hot spots" where development is taking place to	Ongoing	Planning & Development Dept., Planning Board, Conservation Commission

	identify proximity to natural resources.		
Strategy 1L	Conduct an annual review of parcels identified as conservation, open space, municipal land, and public access areas to identify; A) the percentage of open space vs. habitat preservation (to the needs of humans and wildlife in Biddeford), B) opportunities to increase unfragmented habitat blocks through the sale/donation of municipal lands, and C) identify trends and growth around/in natural resources areas	Ongoing	Conservation Commission, GIS Staff
Strategy 1M	Continue to monitor state agency GIS maps and data to integrate natural resource inventory information into Biddeford's own GIS maps and to inform municipal decision-making.	Ongoing	GIS Staff, Conservation Commission
Strategy 1N	Increase awareness of incentive programs to aid private landowners in investing in the long-term stewardship of their property.	Ongoing	Conservation Commission
Strategy 1O	Pursue more detailed surveys and documentation of vernal pools throughout Biddeford, with the State Focus Area of Ecological Significance being the priority. This work may be conducted in partnership with UNE, local land trusts, and/or consultants.	2	Conservation Commission, City Staff
Strategy 1P	Develop a pipeline for reduced processing time and permitting requirements for development applications that meet certain standards (e.g., habitat preserved, habitat connectivity, etc.) to encourage smart growth, habitat-friendly developments, and a focus on development in growth areas.	2	Planning & Development Dept., Planning Board
Strategy 1Q	Incentivize increased buffers, habitat conservation, and connectivity through voluntary programs that allow smaller lot sizes in exchange for more open space preserved.	2	Planning & Development Dept., Planning Board, Conservation Commission
Strategy 1R	The City shall develop a list of buffers specific to each natural resource, seeking to increase buffers beyond state minimums, and to align with recommendations from habitat experts to protect Biddeford's specific natural resources.	2	Planning & Development Dept., Planning Board, Conservation Commission

Strategy 1S	The City shall select and hire a Consultant for all environmental reviews for development applications, to be paid for with funds from the developer, with the Consultant reporting directly to the City.	1	Planning & Development Dept., Planning Board
Policy 2	To coordinate with neighboring communities and both regional/state resource agencies to protect shared critical natural resources.		
Strategy 2A	Collaborate with IFW's Beginning with Habitat Program to aid in the development of conservation planning, the development of overlay zoning, natural resource inventories, and/or other habitat protection programs to prioritize wildlife corridors and vernal pools.	1	Conservation Commission, Planning Board
Strategy 2B	Continue to collaborate with local Land Trusts through conservation planning, title-in-fee donations, and easements to protect parcels that can be added to, or begin forming unfragmented blocks of habitat and natural resources.	Ongoing	Planning & Development Dept., Conservation Commission
Policy 3	Prioritize habitat connectivity in reviewing development proposals within critical natural resource areas, as a means of reducing habitat fragmentation and roadway mortality for all wildlife species.		
Strategy 3A	The City may work with IFW to identify areas where wildlife crossings can benefit listed species, developing a plan and timeline for installation of crossings in natural resource areas — with "turtle crossings" being a priority. Design and implementation resources are listed in the appendix. (bmp_herp_2016.pdf, pages 30-32)	3	Planning & Development Dept., Public Works, Conservation Commission
Strategy 3B	Monitor public works projects (road work, infrastructure updates, etc) near stream crossings or other critical habitat to identify opportunities to proactively update stream crossings to Stream Smart designs that improve and restore stream function or reduce roadway mortality for at-risk species.	Ongoing	Public Works
Strategy 3C	Conduct an annual review of reported wildlife collisions and roadkill removal requests to identify areas of increased roadway mortality that can benefit from the following (in priority order); A) altering wildlife behavior (reducing forage plants along roadways, adding fencing, and/or wildlife crossings beneath roadways),	Ongoing	Conservation Commission, Police, Animal Control

	B) altering driver behavior (reduced speed limits, speed humps, etc.), and C) improved driver awareness (signage, lighting, roadway markings).		
Strategy 3D	Identify properties that may overlap with Saltmarsh Migration as sea levels rise, prioritizing the acquisition of these parcels to allow for habitat expansion and to reduce strains on municipal services in these areas.	3 / 4	Planning & Development Dept., Conservation Commission
END			

SECTION 10: WATER RESOURCES

1. Background

Water resources such as lakes, rivers, streams, ponds and groundwater contribute significantly to a community's quality of life. They provide recreational and commercial opportunities, as well as supplying clean drinking water for residential, municipal, commercial, and industrial needs. The quantity and quality of Biddeford's water resources can be affected by factors such as land use including development, non-point source pollution (e.g., increased stormwater runoff), impervious surface expansion, septic system density and failures, agricultural activities, industrial discharges, road salt application, shoreline erosion, and climate-driven changes in precipitation and sea-level rise. How land is changed and used can in turn have effects (positive and negative) on the water resource itself and the people who utilize their benefits.

2. Water Resources at a Glance

Biddeford's water uses reflect the city's strong connection to the Saco River along with its coastal shoreline, groundwater resources, and network of wetlands and estuaries. These uses include public drinking water supply drawn from the Saco River and from groundwater aquifers, marina and working-waterfront activities, recreational boating and fishing, and beach-based recreation at Biddeford Pool, Fortunes Rocks, and Hills Beach. The City's coastal water resources support shellfish habitat, finfish nurseries, other essential ecological functions such as flood storage, and habitat for migratory birds and dune-dependent species. Because these activities rely on clean, resilient waterways and aquifers, protecting Biddeford's water resources is essential for public health, economic vitality, and long-term environmental sustainability.

- There are 3 Public Water Systems (PWS) in the City of Biddeford. This includes:
  a. One (2) Community Water Systems
  b. Two (2) Transient, Non-Community (NC) Water Systems.
- There are approximately 6,160 customers in Biddeford that are served by Public Water Supplies from either H2O America (formerly Maine Water) or by the Kennebunk, Kennebunkport and Wells (KKW) Water District.
- Four (4) million gallons of Saco River water filtered per day (on average). *
- No per- and polyfluoroalkyl substances (PFAS) detection in raw water source. (Saco River) *
- 274 homes are served by private wells.

*From H2O America 's 2024 Annual Water Quality Report (Biddeford/Saco Division)
**Maine Stream Habitat Viewer (IFW)

Water-Dependent Uses

- H2O America's Filtration Plant (Drinking Water Supply)
- Brookfield Renewables Hydroelectric Dams on the Saco River
- Shellfish harvesting (commercial and recreational)
- Commercial boat yards on the river
- Biddeford Pool Yacht Club
- University of New England's Dept. of Marine Sciences
- Other commercial and recreational fishing/processing

Public Access to Water Resources

- Overview of public access in Biddeford
- Boat launch details and images
- Riverwalk
- Map #2 - Public Access Points, Boat Launches, etc.

Threats to Water Resources

- Non-Point Source (NPS) pollution occurs when rainfall or snowmelt moves over and through the ground, picking up and carrying away natural and human-made pollutants before depositing them into lakes, rivers, wetlands, coastal rivers, and underground sources of drinking water, including:
    - Stormwater runoff from roads, parking lots, and rooftops carrying oil, metals, and sediment into streams and wetlands.
    - Fertilizer and pesticide runoff from lawns, athletic fields, and entering surface water and groundwater.
    - Erosion and sediment transport from construction sites impacting nearby rivers, streams, and estuaries.
    - Failing septic systems contributing nutrients, bacteria, and pathogens to groundwater and surface waters.
    - Pet waste left on the ground washing into storm drains and waterways during rainfall events.
    - Salt and sand application from winter road maintenance degrading freshwater quality.
    - Improper disposal of household chemicals, oils, and paints contaminating soils and groundwater.
    - Leachate generation from improperly managed solid waste or debris piles affecting groundwater quality.
    - Atmospheric deposition from vehicle emissions and industrial sources contributing pollutants to water bodies.
    - Runoff from marinas and boat maintenance areas introducing fuels, solvents, and metals into coastal waters.
    - Forestry and land clearing activities increasing sedimentation and altering natural drainage patterns.

Commented [AH1]: These are all great! Wondering if you can define non-point source pollution and then have all NPS sources be sub-bullets? As you'll get into NPS pollution impacting certain waterbodys/watersheds below so the definition and examples will tie into that.

- Inadequate or outdated stormwater infrastructure stressed by more intense and frequent precipitation events associated with climate change.
- Rising water temperatures affecting cold-water fisheries, increasing the likelihood of harmful algal blooms, and reducing overall aquatic ecosystem health.
- Increased groundwater withdrawals in areas without public water service, which can reduce aquifer levels, impact private wells, and diminish baseflow to nearby streams and wetlands.
- Erosion of streambanks, coastal bluffs, dunes, and other vulnerable shorelines, accelerated by land-clearing, storm events, and sea-level rise.
- Spread of invasive aquatic and wetland plant species that displace native vegetation, limit recreation, and impair water quality.
- Legacy contamination and emerging contaminants, such as PFAS, petroleum compounds, road salt, and historical industrial discharges, which continue to pose long-term water quality and public health challenges.
- Habitat fragmentation and loss of riparian buffers, reducing the natural capacity of forests, wetlands, and floodplains to filter pollutants and moderate stormflows.
- State mandated mobile home park overlay zones.

3. Surface Waters

The Maine Department of Environmental Protection classifies surface water bodies under State law to establish state-wide water quality goals. The DEP Water Quality Classification system is used to manage the state's surface waters. The system establishes water quality goals, assigns all waters a water quality classification, and sets uses and water quality criteria for each class. The classification system includes four classes for freshwater rivers and streams, three classes for marine waters, and one class for lakes and ponds. The Integrated Water Quality Monitoring and Assessment Report or "Integrated Report" (IR) summarizes water quality data collected by the DEP as well as numerous other state, federal and tribal government agencies, volunteer water monitoring organizations and other sources. The Clean Water Act requires states to submit an Integrated Report to EPA every even-numbered year. Monitoring information is analyzed by the DEP to assess the ability of Maine's water resources to meet uses such as drinking water, aquatic life use support, fishing or recreation as established by Maine's Water Classification Laws.

Fresh Surface Waters
The Maine Legislature enacted Standards for Classification of Fresh Surface Waters in Title 38 M.R.S. §465 to define designated uses, set minimum water-quality criteria, and guide the long-term protection and management of Maine's rivers, streams, and lakes. The standards for the classifications of fresh surface waters that are not classified as great ponds are described below.

- **Class AA** - highest classification; applied to waters considered outstanding natural resources, to be preserved because of ecological, scenic, recreational or social importance.
- **Class A** - second-highest classification; intended to support drinking water (after disinfection), recreation, fishing, industrial uses, hydropower, navigation, and habitat for aquatic life.
- **Class B** - third-level classification; suitable for drinking water supply (after treatment), recreation, fishing, industrial uses, hydropower, navigation; supports aquatic life under unimpaired conditions.
- **Class C** - the lowest classification for fresh surface waters; still supports drinking water supply (after treatment), recreation, fishing, industrial uses, hydropower, navigation, and aquatic life though with more modest water-quality criteria compared to higher classes.

Estuarine and Marine Waters
The Maine Legislature enacted Standards for Classification of Estuarine and Marine Waters in Title 38 M.R.S. §465-B, establishing designated uses, discharge limitations, and minimum water-quality criteria for the State's coastal, estuarine, and marine environments."

- **Class SA** – Highest quality estuarine and marine waters designated as the most pristine coastal waters. Must be free of direct wastewater discharges and support habitat for fish and other marine life along with being suitable for recreation in and on the water, shell fishing, aquaculture, fishing, and navigation. Class SA water habitat must be maintained in a natural, unimpaired condition.
- **Class SB** – High-quality estuarine and marine waters that allows restricted wastewater discharges, but water quality must remain good. Supports recreation, fishing, habitat for marine life, and commercial shell fishing, provided the waters meet criteria for bacterial contamination. Aquatic habitat must be of good quality, capable of supporting indigenous species and must meet numerical standards for dissolved oxygen and bacteria, protecting marine life and public health.
- **Class SC** – Lowest classification for estuarine and marine waters that allows treated wastewater discharges when licensed. Class SC waters are suitable for fishing, recreation, and navigation. The habitat must be maintained but is not required to meet the same strict conditions as SA or SB waters. Must still support aquatic life, with dissolved oxygen and bacteria standards appropriate for this class. This standard often applied to working waterfronts, harbors, and estuaries influenced by development.

While Biddeford's coastal waters are primarily classified under state law as Class SB, several localized segments fail to meet these standards and are heavily tracked by the Maine DEP Integrated Report for shellfish-related impairments. Nonpoint source pollution, including stormwater runoff from developed coastal zones, wildlife, and subsurface wastewater disposal, drives elevated bacterial loads in these areas.

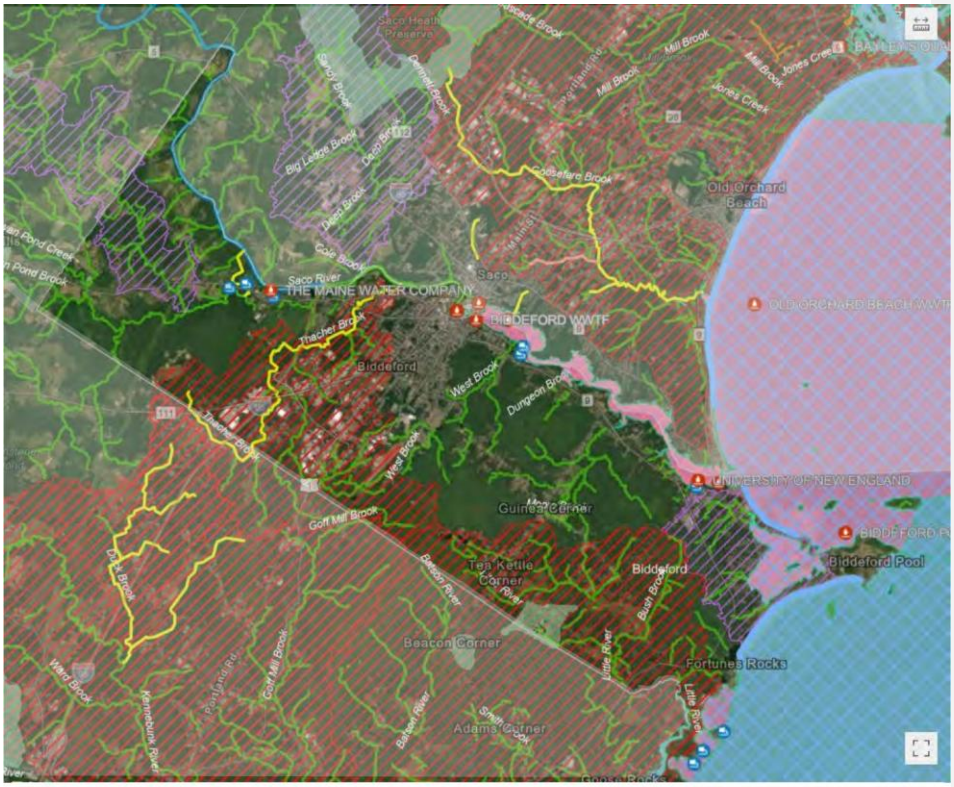
According to the Maine Department of Marine Resources (DMR), the city's intertidal zones fall within Shellfish Growing Areas WF and WG. Due to persistent fecal coliform risks, the state enforces the following harvesting restrictions:

- **Biddeford Pool & Back Bay** – These highly valued commercial and recreational shellfishing flats operate under a Conditionally Approved status. Back Bay features a recuring seasonal pollution closure from September 1st through October 31st, and the broader Biddeford Pool flat triggers an automatic emergency closure following any rainfall event meeting or exceeding 1 inch within a 24-hour period.
- **The Saco River Estuary** – The tidal mouth of the Saco River is subject to a permanent Prohibited classification for all Shellfish harvesting due to upstream point-source concentrations, historical runoff, and heavy marine traffic.

3.1. Lakes and Ponds

The Lakes of Maine organization maintains data pertaining to surface water bodies (Lakes and Ponds) within the State of Maine. According to Lakes of Maine's website, there are currently six (6) freshwater ponds within Biddeford. Information pertaining to water quality

within these ponds was not available. A description of the ponds based on the information available from Lakes of Maine is provided in the table below.



Parameter	*Etherington Pond*	Great Pond	Lilly Pond	Lords Pond	Reservoir	Wilcox Pond
Area (acres)	17	8	4	4	1	4
Perimeter (miles)	1	0.4	0.4	0.4	0.1	0.5
Mean Depth (feet)	—	—	—	—	—	4
Max Depth (feet)	—	3	—	—	—	7
DeLorme Page	3	3	3	3	3	3
Fishery Type	n/a	n/a	n/a	n/a	n/a	Coldwater
Invasive Aquatic Plant Infestation	None known	None known	None known	None known	None known	None known

Lake Characteristics Source: Lakes of Maine. (2025). *Lake overview and watershed information for [Lake Name]*. Retrieved from https://www.lakesofmaine.org/search-results.html?DoWhat=&l=&t=biddeford&c=&z=&m= (Accessed [December 2025}) — where the data are compiled from Maine DEP, Maine IF&W, and Maine Office of GIS.

3.2. Watersheds

Watersheds are the land areas that in which rain, snowmelt, and groundwater flow into shared water bodies such as rivers, streams, lakes, wetlands, and coastal estuaries. They function as natural systems that regulate water flow, filter pollutants, recharge aquifers, and support ecological health. Protecting watersheds is essential for maintaining clean drinking water, reducing flooding, safeguarding habitat, and ensuring the long-term resilience of Biddeford's water resources.

Biddeford boasts ten (10) separate watersheds across our geographical area. Some of the watersheds in the more developed areas have seen a degradation in water quality (ex. Thatcher Brook) due to increased land use, primarily the expansion of impervious surfaces and non-point source pollution. Many of the other watersheds lack the necessary data to accurately understand the changes Biddeford's growth has had on our water resources.

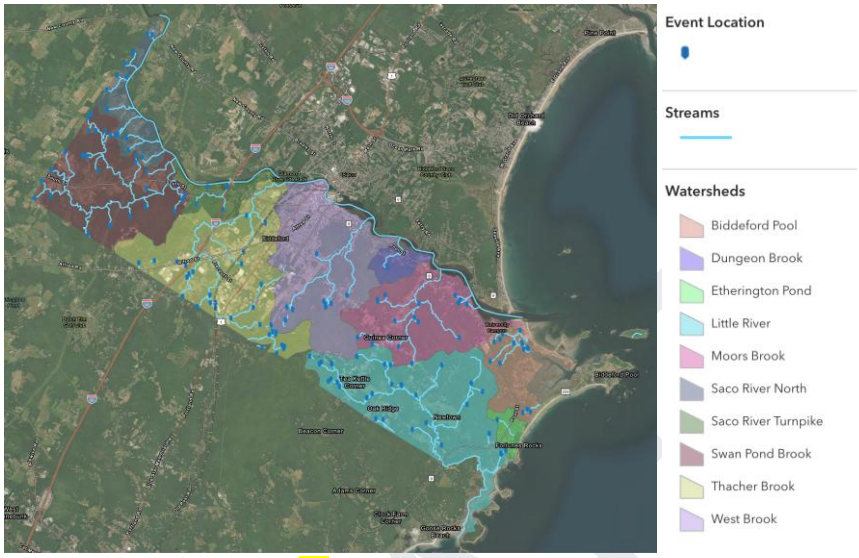


Figure XX: Overview of Biddeford's Watersheds

Watershed	Water Body / Sub-Watershed	Section	Classification
Saco River	Saco River	Western boundary to the I-95 Bridge	A*
		I-95 Bridge to Tidewaters	B*
		Tidewaters to Camp Ellis Breakwater	SC
	Swan Pond Brook	---	B**
	Thatcher Brook	---	B*
	Richardson Brook	---	B
	West Brook	Origin to head of tide	B
	West Brook	Head of tide to mouth	SC
	Dungeon Brook	---	B
	Moores Brook	---	B
	Tributaries (Tidal)	---	SC
Little River	Little River	Origin to head of tide	B
	Little River	Head of tide to mouth	SB
	Bush Brook (Tributary)	---	B
	Other Tributaries	---	B
Biddeford Pool	Biddeford Pool	---	SB
	Tributaries (Tidal)	---	SB

Watershed	Water Body / Sub-Watershed	Section	Classification
	Tributaries (Non-Tidal)	---	B
Etherington Pond	Etherington Pond (Tributaries)	---	B

Notes:
* Impaired Water Body – Does Not Meet Classification
** Swan Pond Brook from South Street to the Saco River is an Impaired Water Body – Does Not Meet Classification.
"---" = Section not listed
Sources:
Maine Department of Environmental Protection. (n.d.). *Maine Resource Explorer* [Interactive GIS mapping application]. ArcGIS Online. https://maine.maps.arcgis.com/apps/instant/portfolio/index.html?appid=7ad05604168b4264bb4a14dcb56f6eeb Maine Department of Environmental Protection. (n.d.). *Maine resource explorer* [Interactive map]. ArcGIS Online. Retrieved May 6, 2026, from https://maine.maps.arcgis.com/apps/instant/portfolio/index.html?appid=7ad05604168b4264bb4a14dcb56f6eeb

Maine DEP's Nonpoint Source (NPS) Priority Watershed List

Given Maine's extensive water resources, statewide watershed prioritization is an important part of the Maine DEP's Nonpoint Source Program. Therefore, Maine DEP's Watershed Management Unit maintains and updates biannually a NPS Priority Watersheds List (Maine DEP, 2023). The Purpose of the list is to encourage NPS abatement work and target funding in watersheds most vulnerable to NPS pollution. This list includes impaired and threatened lake, streams and marine waters. Impaired water bodies are those impacted by non-point source pollution that do not currently meet state water quality standards, while threatened water bodies are those that currently meet state water quality standards but are at risk of water quality decline due to non-point source pollution. There are four waterbodies that are within or have a portion of their watershed within the City of Biddeford that are included on the NPS Priority List, Thatcher Brook (impaired stream), Swan Pond Brook Tributary (threatened stream), Goosefare Bay (impaired marine) and Biddeford Pool (threatened marine). Most details about each listing reasoning is provided in the watershed descriptions below.

Saco River Watershed

The Saco River originates high in the White Mountains at the outlet of Saco River Lake near Crawford Notch in New Hampshire. The basin has a total area of 1,697 square miles and is 75 miles long and 45 miles wide at its widest point.

The Saco River forms the northern boundary of the City from the west limits of the City until its mouth at the Atlantic Ocean. More than two-thirds (2/3) of the City and all of Western Biddeford lie within the Saco River Watershed. Head of tide for the river is at Factory Island below Cataract East Dam in Saco and below Cataract West Dam, below the falls between Biddeford and Saco.

The Saco River is used for both commercial and recreational purposes as well as being the source of Biddeford's primary public water supplier, MaineWater. Several sections of the Saco River are used more heavily than others, depending on public access points. The Saco River and its watershed also provides wildlife habitat for various species.

All land within 500 feet of the riverbank on either side of the Saco River is within the Saco River Corridor. Development within the corridor is subject to the requirements of the Saco River Corridor Commission (SRCC).

Commented [AH2]: Good place to describe what this is.

The SRCC is a regional regulatory agency (or quasi-governmental agency) established by the State of Maine in 1973 to protect the water quality, natural resources, and scenic character of the Saco River corridor. The Commission administers the Saco River Corridor Act by overseeing land use and development activities within the corridor to help prevent adverse impacts to rivers, wetlands, groundwater, and public drinking water resources.

Four dams are located on the Saco River as it flows past Biddeford, three of which are partly or entirely within Biddeford. Bradbury Dam is located entirely in Biddeford in the south channel of the river as it rounds Springs Island. Springs Dam is in the north channel around Springs Island and spans to the City of Saco. Cataract West Dam span the Saco River in the west channel of the river around Factory Island. The fourth, Cataract East Dam, is located in the City of Saco within the channel east of Factory Island. These dams are part of the Cataract Hydroelectric Project and are all owned by Brookfield Renewable Power.

In 2006 Northern Ecological Associates, Inc. were contracted with the City of Biddeford to conduct a stream protection study throughout Biddeford. As part of that Study they identified and mapped watersheds and subwatersheds in Biddeford. Within the Saco River watershed, the following subwatersheds were identified, from west to east: Saco River North, Swan Pond Brook, Saco River Turnpike, Thatcher Brook, West Brook, Dungeon Brook and Moores Brook. Of these, Swan Pond Brook and Thatcher Brook, located in Western Biddeford, are the largest.

From a Water Quality perspective, as provided in the Maine Department of Environmental Protection (MDEP) 2018/2020/2022 Integrated Water Quality Monitoring and Assessment Report, the Saco River from outside of Biddeford to the I-95 Bridge is classified as Class A. This segment of the Saco River is in Category 2 of the Integrated Report (2024) indicating it is attaining some designated uses, but insufficient information for other uses.

From the I-95 Bridge to where the river becomes tidal (below the East and West Cataract Dams) the Saco River is classified as Class B. This segment of the Saco River is also in Category 2 of the Integrated Report (2024) indicating it is attaining some designated uses, but insufficient information for other uses.

Below the dams the Saco River is tidal and is classified as Class SC. This segment of the Saco River is listed in Category 4-A: Rivers and Streams with Impaired Use Other than Mercury – TMDL completed due to bacteria from combined sewer overflows and 4-A: Estuarine and Marine Waters with Impaired Shellfish Harvesting Designated Use – TMDL completed (bacteria from Combine Sewer Overflows), and Category 5-A: Estuarine and Marine Waters Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D – TMDL Required due to toxics and Copper

The Saco Watershed Collaborative…

Saco River North Subwatershed.

The Saco River North Subwatershed is located north of the Swan Pond Brook Subwatershed (see below) and includes eight unnamed streams (and tributaries) which have mouths on the Saco River. It is a relatively small subwatershed (844 acres or 1.32 square miles) that contains low density residential development along with agricultural land uses and some forested areas. There are relatively few wetlands in the subwatershed identified as National Wetland Inventory (NWI) wetlands which are wetlands which have been roughly located based on aerial photography. The relative absence of NWI wetlands in this subwatershed does not mean there are not more wetlands than identified as NWI wetlands.

The Saco River North Subwatershed contains identified riparian habitat according to the Maine Department of Inland Fisheries and Wildlife (MDIFW) surrounding the streams present here which feed the Saco River. A riparian habitat is an area where land and water come together. These areas support a greater diversity of wildlife than nearly all other habitats. Riparian habitats also are often related to Deer Wintering Areas.

According to MDIFW, there are two small areas within this subwatershed that represents inland waterfowl/wading bird habitat, both between River Road and Buzzell close to the border with Dayton that are associated with NWI wetlands.

Commented [AH3]: Up to you but I feel like this can be removed since you provided the general information for class A waterbodies above and I'm wary that just including this aspect of the classification definition omits some of the other key points about class A waters - like recreating in/on/over and what that means for e.coli levels, etc (just using that as one example). So it seems like keeping all the specific information about each classification above and then just including what the class is and if it's not meeting classification, then including the why in these watershed subsections makes sense

Commented [AH4]: Similar to above comment, could probably take out

From a Water Quality perspective, as provided in the MDEP 2018/2020/2022 Integrated Water Quality Report Maps, the unnamed streams in this watershed which feed the Saco River are classified as Class B.

Also of note is that there is one active “water supply system” in this subwatershed. Located at 610 New County Road, Homestead by the River Campground qualifies as a public water supply under the definitions established by the State.

Swan Pond Brook Subwatershed.

The Swan Pond Brook Subwatershed in western Biddeford and is relatively large subwatershed measuring 2,912 acres in size (4.55 square miles). It is characterized by quite a few unnamed streams which flow into Swan Pond Brook itself before flowing into the Saco River. Swan Pond Brook meets the Saco River upstream of the public water supply intake for MaineWater. The subwatershed is relatively undeveloped and contains some large areas which qualify as undeveloped habitat blocks according to MDIFW.

Swan Pond Brook and its watershed is a high-value riparian habitat according to the Maine Department of Inland Fisheries and Wildlife (MDIFW). The subwatershed area also contains deer wintering areas which will be discussed in more detail in Section 10). A large Deer Wintering Area is located between the boundaries of the Swan Pond Brook Subwatershed and the Thatcher Brook Subwatershed. Further, there are quite a few small NWI wetlands identified in the subwatershed, along with a large NWI wetland located north of Andrews Road on land owned by the City of Biddeford and MaineWater. This large NWI is identified as a Red Maple Swamp Natural Community by MDIFW and is located with the large Deer Wintering Area shared between the Swan Pond Brook Subwatershed and the Thatcher Brook Subwatershed. There is also a fairly large area identified as inland waterfowl/wading bird habitat north of the intersection of South Street and River Road in close proximity to the Saco River.

From a Water Quality perspective, as provided in the MDEP 2018/2020/2022 Integrated Water Quality Report Maps, Swan Pond Brook and its tributaries are classified as Class B. A segment of Swan Pond Brook (referred to as Swan Pond Brook at South Street) is listed in Category 4-A of the Integrated Report (2024) which applies to “rivers and streams with impaired use other than mercury – TMDL completed,” This segment is listed as impaired due to bacteria (*e.coli*).

A tributary of Swan Pond Brook, referred to as “Swan Pond Brook Tributary” is designated as a Class B waterbody, however, it is listed in Category 3 of the IR (2024) as “insufficient information to determine if designated uses are attained (one or more uses may be impaired).” This segment was listed originally in 2012 as not meeting the Aquatic Life Use criteria and additional data was needed to confirm whether impairment

exists. Due to this listing, Swan Pond Brook Tributary was added to the NPS Priority List as the likely cause of not meeting it's classification is due to nonpoint source pollution.

Thatcher Brook Subwatershed.

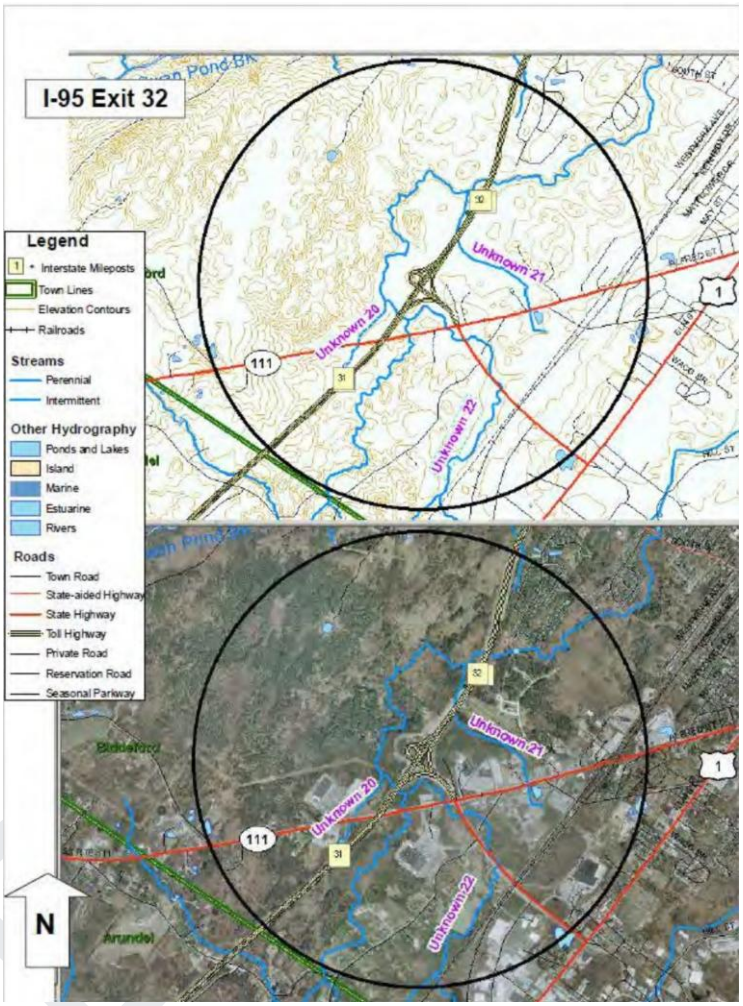
The Thatcher Brook Subwatershed in central Biddeford is relatively large subwatershed measuring 3,561 acres in size (5.59 square miles) and an additional 1.52 square miles in Arundel. It is characterized by an assortment of land uses and contains unnamed tributary streams which flow into Thatcher Brook as well as Richardson Brook which flows out of the Biddeford Airport Industrial Park, through the Biddeford Industrial Park, and ultimately into Thatcher Brook. Thatcher Brook itself begins in Arundel but is largely located within the built area of Biddeford. Thatcher Brook extends from the Arundel town line, parallel to the Maine Turnpike, north across South Street and into the Saco River. Thatcher Brook outlets into the Saco River east of I-95 along the east edge of Rotary Park. Thatcher Brook's watershed area consists of 14% impervious cover (IC) and contains densely developed commercial sections along Route 1 and Route 111. The designated growth area within the watershed includes retail and commercial development, most of the City's industrial/business parks, and low to moderate income housing. However, the watershed also contains much undeveloped forest, wetlands, and pasture lands.

There are some large National Wetland Inventory wetlands located particularly in close proximity to Richardson Brook and Thatcher Brook.

From a Water Quality perspective, as provided in the MDEP 2024 Integrated Water Quality Report, Thatcher Brook and its tributaries are classified as Class B. Thatcher Brook, however, is identified as not meeting its Classification (uses) and, as such, is considered "impaired". Thatcher Brook is listed in "Category 4-A: Rivers and Streams with Impaired Use Other than Mercury – TMDL completed" for aquatic life (benthic macroinvertebrates/biomonitoring), bacteria nonattainment, and degraded aquatic habitat, caused by urban nonpoint source pollution. Putting it also on the NPS Priority List. The Brook is also listed as an Urban Impaired Stream by Maine DEP in Chapter 502 of Stormwater Management Law. This designation was determined because it is a stream that fails to meet water quality standards because of effects of stormwater runoff from developed land. Additional stormwater treatment controls are necessary in urban watersheds of impaired streams because proposed stormwater sources in urban and urbanizing areas contribute to further degradation of stream water quality. This designation establishes criteria for regulatory oversight of proposed development in this watershed.

Commented [AH5]: Same as comments above

In addition to the impairment status of the Brook, a wetland within the Thatcher Brook Subwatershed is impaired. A 14.21-acre wetland located between I-95 and the Walmart on Boulder Way is listed in Category 4-A "Wetland Habitat with Impaired Use, TMDL Completed" for aquatic life use impairment.



The Maine DEP has identified Unnamed Tributaries 20, 21, and 22, small headwater streams feeding the Thatcher Brook watershed near the Maine Turnpike Exit 32 interchange, as waterbodies at acute risk of current and future impairment. The DEP warns that intense, exit-related commercial and retail development within these small catchments threatens to severely degrade habitat and water quality. Because these smaller, unnamed streams have low dilution capacity, they are highly sensitive to the initial shocks of land clearing, canopy removal, and increased stormwater velocities associated with highway-corridor expansion.

Further, according to the TBWMP, “In August 2009, Thatcher Brook was included in MDEP’s Statewide Bacteria Total Maximum Daily Load (TMDL) Report, which uses bacteria as an indicator for the presence of pathogens in water. This bacteria TMDL report provides documentation of impairment and information on pollutant sources that are intended to provide guidance for protection of the waterbody by watershed stakeholders. In September 2012, the United States Environmental Protection Agency (EPA) approved MDEP’s Statewide Impervious Cover (IC) TMDL Assessment, in which Thatcher Brook is included as an impaired stream. This assessment provides a framework for addressing aquatic life and habitat impairments by using impervious cover as a surrogate for a suite of pollutants commonly found in urban stormwater runoff. This TMDL establishes the target percentage of Impervious Cover (IC) for the watershed and provides guidance for efforts to improve water quality in Thatcher Brook.”

The TBWMP provides a framework for the City of Biddeford to utilize moving forward to address water quality issues regarding Thatcher Brook at a watershed level. Restoration of impaired waters can take several decades. As such, watershed plans all become outdated over time. The Plan should be periodically evaluated and updated so it remains relevant and useful. New issues may be identified, and alternative strategies may become available. In addition, as the plan is implemented the timeline, milestones and cost may need to be adjusted to be more realistic. Watershed plans in Maine are typically written to be implemented over a ten-year period. The TBWMP was written to be carried out through local and federal funding. The Maine DEP administers the Nonpoint Source Program which administers federal funding through Section 319 of the Clean Water Act to help communities make progress towards restoring or protecting waterbodies that are named on their NPS Priority List. To be eligible for funding a watershed-based plan must have been written or updated within the past ten years. The TBWMP expired in 2025 and therefore needs to be updated in order to be eligible for future funding. The Maine DEP’s “Guidance for Updating Maine Watershed-based Plans[1]” described this process in more detail.

Commented [AH6]: Suggest some language that explains that yes it can still serve as a framework, but in order to be eligible for implementation funding it has to be updated, and just generally a lot can change in a watershed in 10 years so updating will help the City to move forward more effectively.

West Brook Subwatershed.

West Brook is located near the eastern side of Downtown Biddeford. It extends from the Saco River, across Pool Road, south across West Street and then parallel along Granite Street. The West Brook watershed virtually splits the City with its southernmost reach close to the Kennebunkport townline to the Saco River. It outlets into the tidal portion of the Saco River. It is a relatively large subwatershed (3,228 acres or 5.04 square miles) that contains much medium and high density development, including Downtown Biddeford, lower density development and agricultural and forested lands to the south.

[1] Microsoft Word - Guidance for Updating Maine Watershed-based Plans_Final.docx

The eastern portion of the subwatershed just begins to get into the “Coastal Forest” (Formerly “Biddeford/Kennebunkport Vernal Pool Complex Focus Area”) which is characterized by a significant number of vernal pools and their associated wildlife habitat, although the majority of this focus area is located in the other subwatersheds discussed below.

Within the subwatershed, between Pool Street and West Street, many of the undeveloped areas are characterized by National Wetland Inventory (NWI) wetlands which are wetlands which have been roughly located based on aerial photography.

According to MDIFW, there are several small areas within this subwatershed that represents Significant Wildlife Habitat and animal Natural Heritage Network Occurrences (endangered, threatened, or rare species in Maine).

From a Water Quality perspective, as provided in the MDEP 2018/2020/2022 Integrated Water Quality Report Maps, the unnamed streams in this watershed which feed into West Brook, as well as West Brook itself, are classified as Class B. West Brook its unnamed tributaries are unimpaired and meet classification goals.

Dungeon Brook Subwatershed.

Dungeon Brook is the smallest of the Saco River watershed areas (352 acres or 0.55 square miles). It extends from the Saco River south across Pool Road for several miles into a major deer wintering area. Inland Fisheries and Wildlife has rated the fisheries value as low for this waterbody.

From a Water Quality perspective, as provided in the MDEP 2018/2020/2022 Integrated Water Quality Report Maps, the unnamed streams in this watershed which feed into Dungeon Brook, as well as Dungeon Brook itself, are classified as Class B. Dungeon Brook and its unnamed tributaries are unimpaired and meet classification goals.

Commented [AH7]: Suggest removing

Moors Brook Subwatershed.
Moores Brook crosses Pool Street at the approximate midpoint between downtown Biddeford and the Hills Beach Road at the University of New England. The Moors Brook watershed extends inland along Guinea Road to West Street. As it enters the Saco River, the brook and river combine to create a diverse environment, including freshwater and saltwater wetland habitats. There are significant salt marshes along this section of the Saco River which is expressive of the estuarine environment.

The Moores Brook subwatershed is medium sized compared to the other watersheds/subwatersheds in Biddeford (2,277 acres or 3.56 square miles) that contains much medium and high density development, including Downtown Biddeford, lower density development and agricultural and forested lands to the south.

The eastern portion of the subwatershed just begins to get into the “Coastal Forest” (Formerly “Biddeford/Kennebunkport Vernal Pool Complex Focus Area”) which is characterized by a significant number of vernal pools and their associated wildlife habitat, although the majority of this focus area is located in the other subwatersheds discussed below.

Within the subwatershed, between Pool Street and West Street, many of the undeveloped areas are characterized by National Wetland Inventory (NWI) wetlands which are wetlands which have been roughly located based on aerial photography. According to the NWI, wetlands in this area are described below:

- Freshwater Forested/Shrub Wetland Habitat
- Freshwater Pond Habitat
- Freshwater Emergent Wetland Habitat; and
- Riverine Habitat

Commented [AH8]: Are these correct? Isn’t south st not in this watershed? Maybe Pool and West st?

Commented [AH9]: Should you specify the type of wetland? For example - freshwater forested/shrub wetland

According to MDIFW, there are several small areas within this subwatershed that represents Significant Wildlife Habitat and animal Natural Heritage Network Occurrences (endangered, threatened, or rare species in Maine).

From a Water Quality perspective, as provided in the MDEP 2018/2020/2022 Integrated Water Quality Report Maps, the unnamed streams in this watershed which feed into Moores Brook, as well as Moores Brook itself, are classified as Class B. Moores Brook and its unnamed tributaries are unimpaired and meet classification goals.

Little River Watershed.
The Little River Watershed is a large watershed (3,685 acres or 5.76 square miles) that discharges into the Atlantic Ocean at Timber Point. The river is highly influenced by tidal action south of Pool Road. There are an expansive network of salt marshes in this area, as well as a host of wildlife and plant life. The Rachel Carson National Wildlife Refuge manages significant acres within the estuary. The supratidal, intertidal and subtidal natural resources within this area support a wealth and diversity of plant, marine and wildlife species. There are no public access points or public recreation facilities in this area.

Within the watershed there are scattered Inland Waterfowl/Wading Bird habitats according to Maine Department of Inland Fisheries and Wildlife (MDIF&W). These are freshwater areas for breeding, migration/staging, and wintering habitats for inland waterfowl or breeding, feeding, loafing, migration, or roosting habitats for inland wading birds.

Within the estuarine/marine portion of the watershed MDIFW have identified Natural Heritage Network Occurrences as well as Salt-hay Saltmarsh Natural Communities and Saltmarsh False-foxglove occurrences which are a species of special concern.

From a Water Quality perspective, as provided in the Maine Department of Environmental Protection (MDEP) 2018/2020/2022 Integrated Water Quality Report Maps, Bush Brook and the unnamed streams in this watershed which feed into Little River, as well as Little River itself, are classified as Class B. Little River, Bush Brook, and Little River's unnamed tributaries are unimpaired and meet classification goals. The estuarine portion of Little River is classified as SB.

The Little River watershed is part of the larger Goose Rocks Beach-Litter River watershed which outlets in Kennebunkport at Goose Rocks Beach. The 2024 Integrated Report lists Goose Rocks – Little River (Kennebunkport) in "Category 5B: Coastal Designated Beaches Impaired for Bacteria Only- TMDL Required" which is a new category. This listing is for recreation in the water based on 2016-2020 Enterococci bacteria monitoring data. Maine DEP also added this watershed to the NPS Priority List in 2023 as nonpoint source pollution is believed to be the likely cause of the impairment. While not in Biddeford, much of the watershed is within Biddeford and therefore working collaboratively with Kennebunkport to investigate the sources of bacteria is important.

Also of note is that there is one active "water supply system" in this watershed. Located at 391 West Street, Shamrock Campground qualifies as a public water supply under the definitions established by the State.

Bush Brook Subwatershed.
Bush Brook, a major tributary of the Little River, extends North from the Little River, crosses Newton Road and then runs parallel to Newtown Road, ending before the junction of Pool Road. There are several wetland areas located along and/or near this waterbody. There is also a nearby deer wintering area to the east of the brook.

From a Water Quality perspective, as provided in the MDEP 2018/2020/2022 Integrated Water Quality Report Maps, Bush Brook is classified as Class B. Bush Brook is unimpaired and meets classification goals.

Commented [AH10]: remove

Etherington Pond Watershed.
The Etherington Pond Watershed is a small watershed (251 acres or 0.39 square miles) that is located north of the Little River Watershed but South of the Biddeford Pool Watershed. Drainage here leads to Lords Pond, Etherington Pond, Lily Pond, and the Atlantic Ocean. It is characterized by unnamed streams. It is an important migratory shorebird flat and salt marsh for feeding and nesting. It supports a number of marine invertebrate species.

From a Water Quality perspective, as provided in the MDEP 2018/2020/2022 Integrated Water Quality Report Maps, Etherington Pond is classified as a Class GPA[2] water and the unnamed streams in this watershed are classified as Class B. The unnamed tributaries in this watershed are unimpaired and meet classification goals.

Biddeford Pool Watershed.
The Biddeford Pool Watershed (BPW) is a relatively small watershed (1,152 acres or 1.8 square miles) that drains an area in the northeastern part of the City. The Pool is an estuary fed by a number of freshwater streams. Biddeford Pool is used for recreational, commercial and wildlife purposes. It is an important migratory shorebird flat and salt marsh for feeding and nesting. It supports a number of marine invertebrate species.

Commented [AH11]: We delineated this watershed in 2020 to be 1.8 square miles

The BPW is located 6 miles southeast of downtown Biddeford and is entirely in the City of Biddeford. The waterbody itself is a 90-acre tidal cove and is fed by five unnamed freshwater tributaries, draining from the headwaters. This tidal estuary is just south of the mouth (~1.5miles) of the Saco River. The tributaries flow from the west towards the pool and are influenced by tides. The northernmost tributary flows through an area of low development through the University of New England (UNE) campus before entering a tall grass tidal marsh where it converges with another tributary into the estuary and eventually the pool itself. The southern tributaries flow through a variety of land uses (forested, residential, and wetland) before discharging into the pool. Within the pool are clam flats (6 zones) that have active shellfish harvest operations. According to most recent land use data from ME DEP the BPW is primarily forested (45%) with developed areas accounting for 20% of the watershed, wetlands 29% and shrubland/grassland 4%. The remaining 2% is comprised of open space, pasture, and/or hay fields. The Pool forms a tidal estuary along the coast which exists in an area of higher density development and increased impervious surface areas.

From a Water Quality perspective, as provided in the MDEP 2018/2020/2022 Integrated Water Quality Report Maps, the unnamed streams in this watershed which feed into Biddeford Pool are classified as Class B. The unnamed tributaries in this watershed are unimpaired and meet classification goals.

Commented [AH12]: remove

The estuarine portion of Biddeford Pool, including the tidal Pool itself, is classified as SB. The tidal portion is listed in Category 2 in the *2024 Integrated Water Quality Monitoring and Assessment Report* for Estuarine and Marine Waters Attaining Some Designated Uses with insignificant data or information to determine if other uses are attained. This area is also listed under category 5-B-1(a) for elevated fecal indicators with shellfish harvesting conditionally approved.

[2] The Maine DEP has one standard for the classification both of great ponds and of natural lakes and ponds less than 10 acres in size, which is Class GPA waters.

3.3. Combined Sewer Overflow

There are currently seven (7) Combined Sewer Overflow (CSO) locations in Biddeford. A CSO is defined as:

- Discharges of untreated wastewater from municipal CSSs. CSOs can be considered hydraulic relief points in a CSS which discharge to a receiving water during wet weather to protect property and prevent sewer backups into people's basements. CSOs typically consist of two components; a CSO Regulator where the untreated wastewater exits the sewer system, and a CSO outfall where the wastewater is discharged to the receiving water. Maine Pollution Discharge Elimination System (MePDES) permits issued by the State License the CSO outfalls, not the CSO regulators. Although uncommon, there can be more than one regulator discharging to a given CSO outfall.

According to the MDEP's *Maine Combined Sewer Overflow 2024 Status Report*, total CSO discharged 20,631,322 gallons into the Saco River. Winter rainfall events combined with snowmelt and frozen ground conditions were responsible for nearly all of Biddeford's combined sewer overflow (CSO) discharge in 2024. The report notes that 99.0% of Biddeford's annual CSO discharge occurred during these winter conditions, as frozen ground increases runoff into the combined sewer system and reduces infiltration into soils.

[Insert more details from Jeff Demers – via his email]

3.4. Stream Crossings

The Maine Inland Fisheries and Wildlife (MIFW) maintains a database of all stream crossings statewide, with a ranking system.

49 Culverts & Stream Crossings in Biddeford: via Maine Stream Habitat Viewer (IFW)

- 9 designated as "barriers"
- 32 designated as "potential barriers"
- 8 designated as "no barrier"

3.5. Water Monitoring

Participation in Maine DEP's Volunteer River Monitoring Program (VRMP) has relied on volunteers to help collect data on three (3) of Biddeford's watersheds.

- Thatcher Brook
- Swan Pond Brook
- West Brook

Commented [AH13]: Perhaps you have this in a different section of your Plan about Public Works facilities and function but I could recommend either here or in a different section to discuss wastewater and regulated stormwater in Biddeford. The wastewater section should go into detail on the Wastewater Treatment Plant, who it services, what is the % of residential, commercial and industrial users, what percent have septic, etc. Where its located, what its daily capacity is, what policy's should be included regarding continuing to make investments to the City's wastewater infrastructure.

The Saco Plan could be a good reference as they also have a regulated stormwater system and a treatment plant, they cover stormwater, septic's beginning on page 101: Saco Comprehensive Plan Final

Another plan to reference would be the City of Bangors, another community with a WWTP and regulated stormwater, if you search "wastewater" in their plan, they have some great policy examples - CED---2022-Comprehensive-Plan-PDF

n

Commented [AH14]: Suggest a short explanation of what this program is here

Volunteer River Monitoring Program, Maine Department of Environmental Protection

The Maine VRMP is a statewide citizen science program coordinated by the Maine Department of Environmental Protection that trains volunteers to collect water quality data from rivers and streams throughout Maine. The program helps track long-term trends in river health by monitoring conditions such as dissolved oxygen, temperature, conductivity, and nutrient levels. Data collected by volunteers supports watershed management, environmental planning, and public awareness of water quality issues across the state.

The data is used by both the City of Biddeford and Maine DEP to understand habitat suitability and other standards within these watersheds, with the following parameters being captured:

- Water Temperature
- Dissolved Oxygen (DO)
- Specific Conductance (SPC)

Thatcher Brook - Impaired Status

The Thatcher Brook Watershed has been labeled an “Urban Impaired Stream” by Maine DEP, resulting in a considerable effort to try to restore water quality in this watershed.

Historically, Thatcher Brook was a Brook Trout fishery and critical watershed habitat, but with development impacts around the I-95 highway and a large amount of impervious surface from shopping center parking lots, water quality has steadily declined over time.

[Insert details from conversation with Addie Halligan about any need for additional monitoring]

The Maine DEP publishes the integrated water quality monitoring and assessment report every two years. The report summarized available water quality information and assesses Maine’s water resources’ attainment of designated uses and standards.

The draft 2024 integrated water quality monitoring and assessment report is available through the Maine DEP’s website at the following link: https://www.maine.gov/dep/water/monitoring/305b/2024/2024_ME_IntegratedRpt-REPORT-DRAFT.pdf.

The City of Biddeford participates in the Maine Healthy Beaches (MHB) Program to monitoring water quality at local coastal beaches, including Hills Beach, Middle Beach, Fortunes Rocks Beach, and Biddeford Pool, and using the data to help protect public health through beach advisories and water quality management.

The integrated Water Quality Report includes data pertaining to Swimming Beach Advisories and Closures. Under Clean Water Act (CWA) guidelines, the designated use of swimming beaches is “recreation in and on the water” (i.e. Primary Contact Recreation). Maine has a Beach Action Value (BAV) for enterococci that is used as a single sample safety threshold (104

MPN/100 mL) for contamination advisories at designated coastal Maine beaches. For beaches participating in the MHB program, the local municipality may issue beach actions including advisories (Contamination or Precautionary Rainfall) and closures. These actions are then posted as notifications to warn of potential health risks. Beach actions are based on a risk analysis performed by the beach manager with assistance from MHB staff. Contamination advisories represent those issued in response to elevated bacteria results, i.e. exceedances of the BAV of 104 enterococci MPN/100 mL, while precautionary rainfall advisories are issued pre-emptively based on local precipitation levels. Closures are rarely issued, and generally only based on the knowledge of a direct source, such as a sewage spill. These advisories/closures are recommendations to the public to avoid water contact activities at the beach until further analyses reveal safe conditions and/or conditions at the monitoring site change.

The table below depicts the beaches within the City of Biddeford and the number of days (as a percent (%)) that the beaches were under a recommended contamination advisory.

Percent of monitoring season a beach is under a recommended contamination advisory.

Beach Name	% Days Under Recommended Contamination Advisory				
	2018	2019	2020	2021	2022
Gil Bouche Park – Biddeford Pool	0%	0%	0%	0%	0%
Middle Beach	0%	0%	0%	0%	0%
Hills Beach	0%	0%	1%	0%	0%
Fortune Rocks Beach	0%	0%	0%	0%	0%

As shown by the data compiled in the Maine DEP's Integrated Water Quality Report, only Hills Beach was under a recommended contamination advisory in 2020 for a short period of time (approximately four days), the remaining beaches within Biddeford were not under a recommended contamination advisory spanning the years from 2018 to 2022.

While the City of Biddeford participates in the Maine DEP's Volunteer River Monitoring Program, there are rivers and streams with Insufficient data or information to determine if designated uses are attained (One or More Uses may be Impaired). Swan Pond Brook tributary is listed in the Integrated Water Quality Assessment report as having insufficient data and is further described in the table below.

Rivers and Streams with Insufficient Data or Information to Determine if Designated Uses are Attained (One or More Uses may be Impaired)

Assessment Unit ID	Segment Name	Location	Size (miles)	Class	Comments
ME0106000211_616R07	Swan Pond Brook Tributary	Tributary Dayton and Biddeford	7.1	Class B	5/22/12: New Category 3 listing for Aquatic Life Use in 2012 cycle: biomonitoring station S-786 showed algae (periphyton) non-attainment in 2005 and 2010. Resampling needed to confirm whether impairment exists

The 2024 DEP's Integrated Water Quality Report also describes rivers and streams with impaired uses other than mercury. Rivers and streams with impaired uses in the City of Biddeford are depicted in the table below.

Rivers and Streams with Impaired Use Other than Mercury - TMDL Completed

Assessment Unit ID	Segment Name	Location	Cause	Size (miles)	Class	TMDL Number	Comments
ME0106000211_616R05	Thacher Brook	Tributary to Saco River	Benthic Macroinvertebrates Bioassessments	5.67	Class B	42478	6/1/23: Phase III Watershed Restoration Project completed in December 2022. 12/31/21: Macroinvertebrates did not meet Class B in 2015 and 2020 at S-451.
ME0106000211_616R05	Thacher Brook	Tributary to Saco River	Escherichia coli	5.67	Class B	37777	4/1/21: Watershed restoration efforts to date include 319 grant projects: Phase I (2017), Phase II (2019) and Phase III (started 2021). Biddeford will complete 3 BMPs in the watershed as part of MS4 permit requirements (2022-2027).

							8/14/14: Watershed Management Plan was completed in early 2015. Benthic macroinvertebrates only met Class C in 2012 (biomonitoring Station 746); sampling planned for 2015. 9/27/12: Aquatic life use impairment now Category 4-A due to approval of Statewide % Impervious Cover TMDL. TMDL uses the spelling 'Thatcher'. 9/28/09: Recreational use impairments now Category 4- A due to approval of statewide bacteria TMDL.
ME0106000211_616R06	Swan Pond Brook at South Street	Tributary to Saco River	Escherichia coli	1	Class B	37777	6/1/23: Phase III Watershed Restoration Project completed in December 2022. 9/28/09: Recreational use impairments now Category 4- A due to approval of statewide bacteria TMDL.
ME0106000211_619R01	Saco River at Biddeford-Saco	Variable, CSO affected	Escherichia coli	0*	Class B	37776	1/19/24: Biddeford reduced CSO discharge significantly between 2020 and 2022. City has proposed 10-year CSO abatement plan (in MEDEP

							review). The resulting level of control would vary from less than a year storm in some drainage areas to a five year storm in other drainage areas. City will invest $35M in the effort. Saco is beginning construction on WWTF which should reduce/eliminate CSO discharge in Saco. 10/1/21: CSO abatement efforts in Biddeford have become larger in scale based on DEP scrutiny of the existing plan. The level of investment must increase to a level commensurate with the scale of the problem. DEP has included the completion of a an updated systemwide CSO Master Plan in June of 2022 as a condition of recent enforcement actions. Biddeford is the farthest behind of any CSO community. 11/25/14: CSO abatement ongoing. 9/28/09: Recreational use impairments now Category 4- A due

							to approval of statewide bacteria TMDL.
ME0106000211_616R05_W043	Thacher Brook (Biddeford) wetland	Wetland station W043, upstream (south) of Rt 111, Biddeford	Benthic Macroinvertebrates Bioassessments	14	Class B	42478	10/7/2016: Biological monitoring done in 2001, 2005 and 2013 shows impairment of aquatic life use. Corrected AU size based on updated mapping, previously 9 acres. 9/27/2012: Aquatic life use impairment now Category 4-A due to approval of Statewide % Impervious Cover TMDL. TMDL uses the spelling 'Thatcher'.

Estuarine and Marine Waters with Impaired Shellfish Harvesting Designated Use – TMDL Completed (Bacteria from Combined Sewer Overflows)

Assessment Unit ID	Segment Name	Location	Cause	Size (sq miles)	Class	Comments
ME010600021105_SC1_E	Biddeford Publicly Owned Treatment Works discharge vicinity (Biddeford)	Upper Saco River	Fecal Coliform	Undetermined	Class SC	**2/14/2024:** Seven remaining discharge points. Preparing revised CSO Master Plan update. Estimated elimination time of <30 years. **12/1/2021:** This assessment

Assessment Unit ID	Segment Name	Location	Cause	Size (sq miles)	Class	Comments
						unit corresponds to 2016 ID ME811-6_na_na. Master Plan update submitted Feb. 2020 but unable to approve. NOV issued Jan. 2021 for lack of approved Plan. DEP requests supplemental Plan be submitted by June 2022. Revised Phase II Master Plan submission.

4. Drinking Water

The City of Biddeford derives drinking water from two primary sources which include PWS surface water from the Saco River that is distributed by the H2O America and KKW, and from groundwater aquifers where wells extract groundwater from both the overburden aquifer and bedrock aquifer.

According to the Maine Geological Survey (MGS) Water Well Database, there are currently 293 wells in Biddeford which include the following:

- 274 domestic drinking water wells
- 5 commercial wells
- 7 geothermal wells
- 1 institutional well, and
- 6 wells described as “other”

Of the 293 wells in Biddeford, 288 are completed as bedrock wells (i.e. drilled into the bedrock aquifer) while the other five draw water from the overburden aquifer (e.g., sand and gravel dug wells).

Well depths in Biddeford range from 21 feet to 645 feet below ground surface (bgs) with the average well depth being 277 feet bgs. The water yield of the wells in gallons per minute (gpm) range between 0.13 gpm to 144 gpm with the average being approximately 12 gpm.

5. Groundwater Aquifers

Biddeford's groundwater occurs in two primary aquifer types: bedrock aquifers and overburden (unconsolidated) aquifers. Bedrock aquifers store and transmit water through fractures and joints in the underlying rock, producing generally lower but reliable yields that can vary significantly depending on fracture distribution. Overburden aquifers, composed of sand, gravel, and other unconsolidated materials, typically provide higher-yielding water supplies and play a key role in groundwater recharge and baseflow to streams and wetlands. Understanding the differences between these aquifer systems is essential for protecting private wells, managing groundwater withdrawals, and guiding development in areas not served by public water.

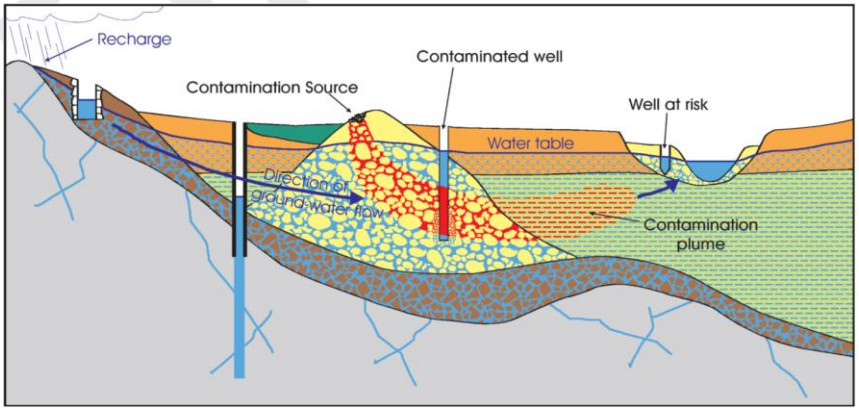
5.1. Bedrock Aquifers

According to the MGS bedrock in Biddeford is comprised of a variety of intrusive (i.e. igneous) and stratified (i.e. sedimentary) bedrock formations. The Bedrock Geology of the Kittery 1:100,000 Quadrangle, Maine and New Hampshire (Hussey, Bothner, & Thompson; edited by Berry; Maine Geological Survey, 2003) depicts the type and location of bedrock formations present in Biddeford. Bedrock formations in Biddeford where groundwater is extracted from bedrock include the following:

5.2. Overburden Aquifers

Overburden aquifers are especially important because their sand and gravel deposits store and transmit far greater quantities of groundwater than the underlying bedrock aquifers, making them critical sources of high-yield wells, groundwater recharge, and baseflow to streams and wetlands; however, their permeable materials also make them more susceptible to contamination from surface activities such as chemical spills, road-salt application, and other land-use impacts. The figure below prepared by the MGS depicts how a contaminant plume may travel through the overburden aquifer.

Figure XX: Contaminant Plume Travel Through an Overburden Aquifer



According to the 1999 Biddeford Comprehensive Plan the Maine Geological Survey *had* identified three areas within the Biddeford that *were* "favorable for the development of groundwater supplies from sand and gravel deposits". These aquifers were identified as being located in the following areas:

- South-central Biddeford between the railroad and the airport.
- Near the intersection of Guinea Road and West Street
- Near the intersection of Fox Farm Road and Oak Ridge Road.

According to the MGS Significant Sand and Gravel Aquifers of the Biddeford Maine Quadrangle (Open File Number 98-149 1998) only one of these locations is identified as a “significant sand and gravel aquifer”, being the Fox Farm Road/Oak Ridge Road location. This aquifer is identified as consisting of “Surficial deposits with moderate to good potential ground-water yield; yields generally greater than 10 gallons per minute to a properly constructed well. Deposits consist primarily of glacial sand and gravel but can include areas of sandy till and alluvium; yields may exceed 50 gallons per minute in deposits hydraulically connected with surface-water bodies, or in extensive deposits where subsurface data are available”.

5.3. Significant Threats to Aquifer Drinking Water Supplies

Commercial and Industrial Activities

The sand and gravel deposits located in south-central Biddeford sit in close proximity to the Biddeford Municipal Airport and nearby industrial/railroad corridors. The primary risks in this zone include the storage, handling, and potential accidental release of hazardous materials such as aviation fuels, solvents, automotive fluids, and industrial chemicals. Because sand and gravel deposits allow rapid downward infiltration, a surface spill in this zone can quickly compromise the local water table before natural filtration can occur.

Transportation Infrastructure

The aquifer materials near the intersection of Guinea Road and West Street, as well as the Fox Farm Road deposit, are heavily intersected by major local arterials and sit down-gradient from the Maine Turnpike (I-95) corridor. Road salting practices present a chronic, long-term threat to groundwater quality. Regular application of road salt (sodium chloride) during winter maintenance leads to elevated chloride plumes in the shallow overburden aquifer, which can travel through groundwater fractures and pollute nearby private drinking wells.

Subsurface Wastewater Disposal

The highest-yielding sand and gravel resource in Biddeford, the Fox Farm Road and Oak Ridge aquifer, is located in a portion of the city’s rural district that is entirely unserved by the public sewer system. Drinking water supplies in this zone rely exclusively on private wells operating alongside private, on-site subsurface wastewater disposal (septic) systems. The primary threats

include nitrate loading and potential bacterial or viral contamination from aging, unmaintained, or densely clustered septic systems. If a septic system fails or is overwhelmed in these coarse, high permeable glacial soils, effluent can rapidly bypass the soil's natural biological treatment layer and infiltrate the underlying drinking water supply.

Emerging Contaminants (PFS)

A systemic threat to both bedrock and overburden aquifers is the presence of Per- and Polyfluoroalkyl Substances (PFAS). These persistent forever chemicals, often associated with legacy firefighting foams or the historical land-application of certain biosolids, presents a highly mobile threat to private residential wells because they do not easily break down and migrate aggressively through groundwater plumes.

6. Existing Preservation and Protective Measures

Biddeford utilizes a combination of local zoning performance standards, state-mandated environmental ordinances, and regional watershed partnerships to preserve its lake, pond, river, stream, and drinking water resources.

6.1. Local Regulatory Mechanisms

Site Plan and Subdivision Review

Biddeford's Site Plan and Subdivision Review processes serve as the primary administrative mechanism where the Planning Board and Code Enforcement Office review and approve development applications for compliance with the city's Shoreland Zoning performance standards, Post-Construction Stormwater management rules, and Erosion and Sedimentation Control requirements.

Shoreland Zoning Ordinance

Biddeford enforces a strict, local Shoreland Zoning framework that meets or exceeds the Maine DEP Chapter 1000 guidelines. The ordinance establishes a protective uniform 100-foot structural setback across primary resource zones to minimize clearing and prevent runoff from entering coastal and freshwater bodies. Urban infill and historic revitalization along the Saco River are carefully managed through the DEP approved Waterfront Renaissance District, balancing dense development with modern public amenities and riverfront access.

Post Construction Stormwater Management

To protect surface water from nonpoint source pollution, the city mandates that developments requiring site plan review must implement a post-construction stormwater management plan. This ordinance (Chapter 34, Article VI) legally binds developers to the standards found in Maine DEP Chapters 500 and 502 rules.

Erosion and Sedimentation Control

In alignment with its MS4 General Permit, the city requires all soil-disturbing construction activities to implement strict erosion control practices matching DEP Chapter 500 appendices to protect downstream brooks like Thatcher Brook.

6.2. Regional and Watershed Protection Measures

The Saco River Corridor Commission (SRCC)

Because the Saco River serves as the primary source of public drinking water for the region and acts as a vital fishery, land use within 500 feet of the river (or within its 100-year floodplain) is subject to the co-jurisdiction of the SRCC under the Saco River Corridor Act (Title 38 MRSA §953). This provides a critical secondary tier of regional oversight for vegetative clearing, structural setbacks, and pollution prevention.

Saco Watershed Collaborative

The city actively participates in regional partnerships to monitor water quality trends, track invasive species, and implement large-scale restoration projects across municipal borders.

6.3. Public Drinking Water and Groundwater Safeguards

The city enforces blanket prohibitions in its Land Development Regulations to protect groundwater resources. The city's general zoning restricts high-risk industrial operations, chemical storage yards, and bulk petroleum facilities from setting up in rural or residential zones near public drinking wells. If a developer proposes a project utilizing or sitting near groundwater infrastructure, they are hit with strict performance standards requiring a hydrogeologic assessment. They must prove that the development will not result in the contamination of existing or potential domestic or public water supply wells.

Public Utilities Infrastructure

The majority of Biddeford's built environment is served by public water drawn directly from the Saco River and treated at the facility serving the Saco-Biddeford division.

Aquifer Protection Overlay (APO)

While the densely developed areas of Biddeford rely on water treated and distributed from the Saco River, rural and suburban households across the western portions of the community depend entirely on private domestic wells tapping into localized groundwater. To safeguard these critical subsurface assets from contamination and ensure long-term drinking water security, the City of Biddeford maintains an Aquifer Protection Overlay (APO) district within its Land Development Regulations (Part III, Chapter V, Section 1).

Mapped directly over high-yield sand and gravel aquifers identified by the Maine Geological Survey, the APO functions as a protective shield over highly permeable soils where surface spills can rapidly migrate into the water table. Because it is an overlay framework, its strict environmental performance standards automatically supersede the underlying base zones.

Key groundwater protections enforced within Biddeford's APO include:

- **Land Use Limitations:** Strict conditional use review or outright prohibitions on high-risk commercial operations, including commercial chemical storage, automotive repair garages, salvage yards, and bulk petroleum facilities.

- **Impervious Surface Caps:** Limitations on total lot coverage to maximize natural precipitation infiltration, ensuring the underlying aquifer can naturally recharge while minimizing concentrated toxic stormwater flows.

- **Best Management Practices (BMPs):** Engineered requirements for on-site stormwater management and nonpoint source pollution containment for any newly approved development footprints within the overlay boundaries.

Wellhead Protection Areas

For areas relying on localized groundwater infrastructure, the city tracks the Maine Drinking Water Program’s Wellhead Protection Areas mapping. For example, the Ocean Pines Campground area is located proximate to two mapped wellhead protection zones associated with the H2O America’s public water supply system. Those mapped areas safeguard groundwater by managing land-use activities within standard 300-foot inner and 1,000-foot outer buffer zones to reduce contamination risks from nearby residential, recreational, or commercial uses.

While the city tracks state-mapped Wellhead Protection Areas, Biddeford currently lacks a localized Wellhead Protection Overlay Ordinance. As a result, the city relies on generalized subdivision review criteria to safeguard groundwater. The city may want to consider developing

a formal Wellhead Protection Ordinance to standardize land-use restrictions within the 300-foot and 1,000-foot public well buffers.

7. Municipal Operations

In addition to enforcing land-use regulations on private development, the City of Biddeford actively implements water quality protection and pollution prevention practices across its daily municipal operations and infrastructure maintenance programs.

7.1. Public Works Operations

Public works crews sweep all public streets and municipally owned parking lots at least once every spring to capture winter sand, debris, and heavy metals before they can wash into local waterways. Crews also regularly inspect, clean, and map the city's catch basins to prevent sediment blockages and stormwater backups.

Municipal maintenance facilities, including the Public Works garage, operate under Stormwater Pollution Prevention Plans. These plans mandate that vehicle maintenance and fueling occur indoors, and that bulk road salt is stored in fully enclosed, covered sheds to prevent rain and snowmelt from generating highly toxic chloride runoff.

The city utilizes modern, calibrated salt-spreading equipment on its plow trucks to monitor and optimize application rates. Training programs focus on minimizing salt usage while maintaining public safety, particularly within the sensitive and urban-impaired Thatcher Brook watershed.

7.2. Contractor Requirements

Biddeford holds its own public works crews and third-party municipal contractors to strict water quality protection benchmarks during active construction projects.

In compliance with the city's updated stormwater rules, any municipal road construction, utility repair, or public facility development that disturbs soil must deploy erosion and sedimentation control practices that meet or exceed the Maine DEP Chapter 500 Appendices standards.

Bidding documents and municipal contracts for capital improvement projects explicitly require third-party contractors to submit and adhere to rigorous erosion and sedimentation control plans. These sites are subject to inspection by the city's Code Enforcement staff or engineering inspectors to ensure that silt fences, catch basin sediment bags, and stabilized construction entrances are actively maintained until the site is fully revegetated.

8. Regional Coordination

Biddeford actively engages with several established local and regional advocacy groups, non-profits, and inter-municipal coalitions to advance water resource protection, pool monitoring resources, and secure watershed-level grant funding:

8.1. Saco Watershed Collaborative

This represents a major opportunity for the city to partner on regional drinking water protection. The collaborative brings together water utilities, conservation districts, land trusts, and municipal planners across the entire Saco River basin. Partnering here allows Biddeford to coordinate upstream pollution mitigation strategies, protect the regional drinking water supply, and access joint funding for water quality initiatives.

8.2. Saco River Corridor Commission (SRCC)

As a statutory compact of 20 municipalities along the river, Biddeford's partnership with the SRCC ensures coordinated land-use oversight within the 500-foot river corridor. This shared jurisdiction acts as a vital tool for enforcing consistent regional standards for vegetative buffers and shoreline protection.

8.3. Saco Valley Land Trust

The Saco Valley Land Trust (SVLT) is a non-profit organization dedicated to the preservation of open space, wildlife habitat, and water quality in Saco, Biddeford, and along the southern portion of the Saco River. The trust owns over 500 acres in Biddeford, Saco, and Buxton, as well as 200 acres of conservation easements.

8.4. University of New England

Located right at the mouth of the Saco River in Biddeford, UNE represents an exceptional local asset. The city has a direct opportunity to partner with UNE's Environmental Studies and Marine Sciences programs, utilizing students and faculty researchers to conduct freshwater monitoring, track invasive species, and support local habitat restoration projects.

8.5. Interlocal Stormwater Working Group (ISWG)

Facilitated by the Cumberland County Soil and Water Conservation District, this regional coalition of MS4-regulated communities allows Biddeford to collaborate with neighboring towns on regional stormwater public education campaigns, volunteer training, and the development of standardized low-impact development (LID) ordinances.

8.6. Thatcher Brook Watershed Committee

Because Thatcher Brook is an urban impaired stream, the city partners with local stakeholders, landowners, and regional conservation districts to implement the Thatcher Brook Watershed Management Plan. This ongoing partnership is critical for driving neighborhood-level outreach, rain garden installations, and stream-bank stabilization efforts.

Water Resource Priority Areas
A ranking system for Environmental Priority Areas as High Value Riparian Habitat Corridor (RH), High Value Water Resources (WR) and High Value Plant and/or Animal Corridors (P/AHC), with 1 the highest priority. The summary emphasizes that “they are all priorities.”

Priority Area	RH	WR	P/AHC
Biddeford/Kennebunkport Vernal Pool Complex			1
Saco River Estuary	1	1	
Biddeford Pool and Clam Flats		1	1
Moors Brook Corridor			
Dungeon Brook Corridor			
West Brook Corridor	1		
Thatcher Brook Corridor	1		1
Swan Pond Brook Corridor	1	1	1
Saco River North Corridor			
Saco River Turnpike Corridor			
Little River Corridor			
Etherington Pond Corridor			

Goals, Policies & Strategies

Goal
To protect and improve the quality and to manage the quantity of the State's water resources, including lakes, aquifers, great ponds, estuaries, rivers and coastal areas.

Policies

1. Protect current and potential drinking water sources, with special emphasis on preventing chemical and septic contamination within the Saco River watershed and local aquifers.
2. Protect significant surface water resources from pollution and improve water quality where needed, specifically prioritizing the restoration of Thatcher Brook and other waterbodies impaired by nonpoint source pollution through the protection of riparian buffers and forested canopies.
3. Protect water resources in designated growth areas while promoting intensive development in those areas by utilizing low-impact development standards and responsive zoning updates.
4. Minimize pollution discharges through the continuous upgrade and maintenance of public sewer systems, wastewater treatment facilities, and private subsurface wastewater disposal oversight.
5. Cooperate with neighboring communities, regional agencies, and local advocacy groups to protect shared water resources, expand watershed monitoring programs, and restore watershed connectivity for fish and wildlife passage.

Strategies

1. Ordinance & Regulatory Updates

1.1. **Stormwater and MS4:** Amend local ordinances to maintain consistent stormwater runoff performance standards that strictly align with Title 38 MRSA 420-D (Chapters 500/502) and MEPDES MS4 permit Requirements.

1.2. **Low-Impact Development:** Amend local zoning and site plan review ordinances to incorporate Low-Impact Development (LID) standards that minimize site clearing, encourage tree preservation, limit effective impervious area, and protect forested canopies in high-priority watersheds.

1.3. **Drinking Water Protection:** Maintain and periodically amend public wellhead and aquifer recharge area protection mechanisms within the zoning ordinance to safeguard municipal drinking water sources and private wells from septic or chemical contamination.

2. Public Infrastructure & Operations

2.1. Road Maintenance

2.1.1. Adopt and enforce water quality protection practices for the construction and maintenance of public/private roads and municipal properties.

2.1.2. Regularly evaluate Public Works snow removal procedures, designate secure snow dump locations, and deploy alternatives to traditional road salts to mitigate chloride introduction into freshwater resources.

2.2. Fish Passage & Connectivity

2.2.1. Update stream crossings identified as ecological barriers or potential barriers during scheduled roadwork and capital infrastructure projects.

2.2.2. Require all new or replacement municipal and contracted stream crossings to follow Maine Department of Inland Fisheries and Wildlife (IF&W) Stream Smart design principles.

2.3. **Community Rating System:** Explore the ability to join the National Flood Insurance Program (NFIP) Community Rating System (CRS).

3. Regional Cooperation & Environmental Monitoring

3.1. **Urban Impaired Streams:** Continue implementing and updating the Thatcher Brook Watershed Management Plan to guide targeted mitigation and restoration efforts, enabling continued compatible development or redevelopment without further stream degradation.

3.2. **Regional Partnerships:** Participate actively in local and regional water quality monitoring and restoration efforts.

3.2.1. Participate in the Saco Watershed Collaborative (SWC), as a means of staying informed about freshwater resources, water quality updates, partnerships, and opportunities to fund.

3.2.2. Continue to monitor streams/brooks in Biddeford as part of the DEP Volunteer River Monitoring Program, eventually expanding our data collection efforts to include all ten (10) watersheds in Biddeford.

3.2.3. Collaborate with educational programs, nonprofits, and other organizations to develop watershed monitoring programs to aid the City in capturing data to support watershed decision-making and improve our understanding of water quality, riparian habitat, and other water resource needs.

3.2.4. Collaborate with the University of New England to identify areas of opportunity for UNE students to support freshwater resources in Biddeford through study, monitoring, and restoration work.

3.2.5. Pursue grants and partnerships to install water quality monitoring equipment on waterbodies.

4. Education, Outreach & Landowner Support

4.1. Implement a public outreach campaign for water resources education and engagement.

4.2. Provide educational materials at appropriate locations regarding aquatic invasive species.

4.3. Provide local contact information at the municipal office for water quality best management practices from resources such as the Natural Resource Conservation Service, University of Maine Cooperative Extension, Soil and Water Conservation District, Maine Forest Service, and/or Small Woodlot Association of Maine.

Strategies

1 = Immediate (0-1 yr)
2 = Near-term (1-3 yrs)
3 = Medium-term (3-6 yrs)
4 = Long-term (6-10 yrs)
Ongoing = Indicates a strategy will take many years or continuous work for implementation.

GOAL (#)	STRATGEY (#)	CHAPTER	STRATEGY/ACTION SUMMARY	LEAD IMPLEMENTER POSSIBLE COLLAB	TIMEFRAME	PRIORITY	GROWTH CAP INVEST	POSSIBLE FUNDING SOURCES	COST/STAFFING
	15.1	WATER RESOURCES	Amend local ordinances to maintain consistent stormwater runoff performance standards that strictly align with Title 38 MRSA 420-D (Chapters 500/502) and MEPDES MS4 permit Requirements.	Planning & Development Dept	Ongoing				
	15.2		Amend local zoning and site plan review ordinances to incorporate Low-Impact Development (LID) standards that minimize site clearing, encourage tree preservation, limit effective impervious area, and protect forested canopies in high-priority watersheds.	Planning & Development Dept					
	15.3		Maintain and periodically amend public wellhead and aquifer recharge area protection mechanisms within the zoning ordinance to safeguard municipal drinking water sources and private wells from septic or chemical contamination.	Planning & Development Dept					
	15.4		Adopt and enforce water quality protection practices for the construction and maintenance of public/private roads and municipal properties.	Planning & Development Dept., Code Enforcement					
	15.5		Regularly evaluate Public Works snow removal procedures, designate secure snow dump locations, and deploy alternatives to traditional road salts to mitigate chloride introduction into freshwater resources.	Public Works, Conservation Commission	2				
	15.6		Update stream crossings identified as ecological barriers or potential barriers during scheduled roadwork and capital infrastructure projects.						
	15.7		Require all new or replacement municipal and contracted stream crossings to follow Maine Department of Inland Fisheries and Wildlife (IF&W) Stream Smart design principles.	Lead: Collab:					

	15.8		Explore the ability to join the National Flood Insurance Program (NFIP) Community Rating System (CRS).	Planning & Development Dept., Code Enforcement	2				
	15.9		Continue implementing and updating the Thatcher Brook Watershed Management Plan to guide targeted mitigation and restoration efforts, enabling continued compatible development or redevelopment without further stream degradation.	Conservation Commission	2				
	15.10		Participate actively in local and regional water quality monitoring and restoration efforts.						
	15.10.1		Participate in the Saco Watershed Collaborative (SWC), as a means of staying informed about freshwater resources, water quality updates, partnerships, and opportunities to fund.	Conservation Commission	1				
	15.10.2		Continue to monitor streams/brooks in Biddeford as part of the DEP Volunteer River Monitoring Program, eventually expanding our data collection efforts to include all ten (10) watersheds in Biddeford.	Conservation Commission	Ongoing				
	15.10.3		Collaborate with educational programs, nonprofits, and other organizations to develop watershed monitoring programs to aid the City in capturing data to support watershed decision-making and improve our understanding of water quality, riparian habitat, and other water resource needs.	Conservation Commission, Recreation Commission	3				
	15.10.4		Collaborate with the University of New England to identify areas of opportunity for UNE students to support freshwater resources in Biddeford through study, monitoring, and restoration work.	Conservation Commission	2				
	15.10.5		Pursue grants and partnerships to install water quality monitoring equipment on waterbodies.						

	15.11		Implement a targeted public outreach campaign regarding watershed health.						
	15.12		Provide educational materials at appropriate locations regarding aquatic invasive species.						
	15.13		Provide local contact information at the municipal office for water quality best management practices from resources such as the Natural Resource Conservation Service, University of Maine Cooperative Extension, Soil and Water Conservation District, Maine Forest Service, and/or Small Woodlot Association of Maine.						

Optional Self-Assessment Checklist

This checklist was developed to ease the preparation of comprehensive plans. Its contents are taken directly from the Comprehensive Plan Review Criteria Rule (07 105 Chapter 208). There are no requirements to submit this checklist for review as it is intended only for the plan preparers.

Water Resources	✓	Page
Analyses		
Are there point sources (direct discharges) of pollution in the community? If so, is the community taking steps to eliminate them?		p. 10-19, CSOs - see comment from DEP with request for additional info about CSO master plan, comment about aditional info from Jeff Demers email
Are there non-point sources of pollution? If so, is the community taking steps to eliminate them?	✓	p. 10-6, pp. 10-9 to 10-18
How are groundwater and surface water supplies and their recharge areas protected?	✓	p. 10-10, pp. 10-29 to 10-31
Do public works crews and contractors use best management practices to protect water resources in their daily operations (e.g. salt/sand pile maintenance, culvert replacement street sweeping, public works garage operations)?	✓	p. 10-32
Are there opportunities to partner with local or regional advocacy groups that promote water resource protection?	✓	pp. 10-33 to 10-34
Condition and Trends		
The community's Comprehensive Planning Water Resources Data Set prepared and provided to the community by the Department of Inland Fisheries and Wildlife, the Department of Environmental Protection and the Office, or their designees.		The plan appears to include nearly everything sent by DEP and specifically called out in their review letter. I have suggested including a few of the maps they called out in their letter, which were not in the plan. The only thing that seems to be missing is more info about point source pollution. There are notes in the plan that suggest this information will be added to the plan, based on information from DEP. DEP is also calling for more local info about the CSO master plan
A description of each great pond, river, surface drinking water supply, and other water bodies of local interest including: a. ecological value; b. threats to water quality or quantity; c. documented water quality and/or invasive species problems.	✓	pp. 10-5 to 10-18
A summary of past and present activities to monitor, assess, and/or improve water quality, mitigate sources of pollution, and control or prevent the spread of invasive species.	✓	pp. 10-19 to 10-26
A description of the location and nature of significant threats to aquifer drinking water supplies.	✓	pp. 10-26 to 10-30
A summary of existing lake, pond, river, stream, and drinking water protection and preservation measures, including local ordinances.	✓	pp. 10-29 to 10-31
Policies		
To protect current and potential drinking water sources.	✓	p. 10-37
To protect significant surface water resources from pollution and improve water quality where needed.	✓	p. 10-37
To protect water resources in growth areas while promoting more intensive development in those areas.	✓	p. 10-37
To minimize pollution discharges through the upgrade of existing public sewer systems and wastewater treatment facilities.	✓	p. 10-37
To cooperate with neighboring communities and regional/local advocacy groups to protect water resources.	✓	p. 10-37
Strategies		
Adopt or amend local land use ordinances as applicable to incorporate stormwater runoff performance standards consistent with: a. Maine Stormwater Management Law and Maine Stormwater regulations (Title 38 M.R.S.A. §420-D and 06-096 CMR 500 and 502). b. Maine Department of Environmental Protection's allocations for allowable levels of phosphorus in lake/pond watersheds. c. Maine Pollution Discharge Elimination System Stormwater Program	✓	p. 10-37
Consider amending local land use ordinances, as applicable, to incorporate low impact development standards.	✓	p. 10-37
Where applicable, develop an urban impaired stream watershed management or mitigation plan that will promote continued development or redevelopment without further stream degradation.	✓	p. 10-38
Maintain, enact or amend public wellhead and aquifer recharge area protection mechanisms, as necessary.	✓	p. 10-37
Encourage landowners to protect water quality. Provide local contact information at the municipal office for water quality best management practices from resources such as the Natural Resource Conservation Service, University of Maine Cooperative Extension, Soil and Water Conservation District, Maine Forest Service, and/or Small Woodlot Association of Maine.	✓	p. 10-39
Adopt water quality protection practices and standards for construction and maintenance of public and private roads and public properties and require their implementation by contractors, owners, and community officials and employees.	✓	p. 10-38
Participate in local and regional efforts to monitor, protect and, where warranted, improve water quality.	✓	p. 10-38
Provide educational materials at appropriate locations regarding aquatic invasive species.	✓	p. 10-39

Comments:

Existing Land Use

Understanding Biddeford's current land-use patterns and zoning framework is essential to assessing existing conditions and determining whether adjustments are necessary to meet the City's goals. Because land use regulations influence all other components of the Comprehensive Plan, zoning serves as a key tool for shaping development and guiding growth. By actively directing change, these regulations help protect the qualities and resources that residents value.

This topic includes

- Current land use
- Town growth and rural areas
- Base Zoning Districts
- Zoning Overlay Districts
- Site Plan & Subdivision Regulations
- York Floodplain management
- Permitting and approvals processes
- Recent development patterns
- Climate change impacts
- Town capacity
- What the community said

Current Land Use

The City of Biddeford occupies approximately 30 square miles of land, comprising approximately 7,800 parcels, which support a varied mix of land uses. Of the land that is developed, a relatively high proportion is devoted to residential uses, open space, agriculture, forestry, and recreation. With continued growth, development patterns east of U.S. Route 1 have become increasingly intensive, characterized by a higher concentration of commercial and industrial uses along the U.S. Route 1 and I-95 corridors.

Biddeford's Land Use Distribution

Land area designated as "residential" is the largest land use category at approximately 40% of the city, and about 75% of the parcels (Fig. 1 and Table 1). Just under 7.8% of land is assessed as Open Space/Tree Growth, and 5.2% is assessed as Commercial uses. There is also a significant amount of land categorized as Industrial (4.6%) and Education, Literary and Scientific (3.5%).

Commercial and Industrial uses combined make up approximately 10% of the city's land. According to the City Assessment, a significant amount of land is considered Vacant or undeveloped (approximately 21%).

[Insert Images representing commercial, residential, farmland, and school]

[Insert Map: Figure 1. Biddeford Land Use by Tax Assessor Category]

Table 1. 2020 Biddeford Land Use in Acres and Parcels Count by Tax Assessment Land Category

Land Use Category	Number of Parcels	Total Area (Acres)
City of Biddeford	141	1,368
Commercial	273	945
Commercial Vacant	33	63
Education, Literary and Scientific	25	632
Industrial	106	838
Industrial Vacant	33	132
Institutional/Charities	145	1,239
Mixed Use	95	52
Non-Municipal Publicly Owned	64	511
Open Space/Tree Growth	37	1,404
Residential	5,870	7,174
Residential Apartment	372	149
Residential Condo	14	12
Residential Vacant	577	3,538
Utilities	3	1
Total Acreage	7,788	18,058

[Insert Map: Figure 2. Government and Publicly-Owned Lands]

City Growth and Rural Areas

The State of Maine's Title 30-A, §4326: Growth management program elements, requires municipalities to develop a growth management program that includes defined Growth Areas, if applicable, as well as Rural Areas. These areas are defined as part of the State's Growth Management Program:

- **Growth Area:** …suitable for orderly residential, commercial, or industrial development…and into which most development projected over 10 years is directed
- **Rural Area:** …area deserving of some level of regulatory protection from unrestricted development…and from which most development projected over 10 years is diverted

The state requires municipalities to direct their infrastructure and facilities investments primarily toward Growth Areas. Biddeford's Growth Area Boundary was determined in the 2023 by the City Council and generally encompasses the area on both sides Route 1 with the **Saco River** being its northern boundary and the **town boundary with Arundel** bounding the area to the south (Fig. 3).

[Insert Figure 3 City of Biddeford Growth Area Boundary, 2006]

Biddeford's Zoning

The City of Biddeford's Zoning Ordinance states the following General Purpose: "The purpose of this ordinance is to promote the health, safety, and general welfare of the residents of the City. Specifically, this ordinance is intended to promote and protect quality of life factors that could be threatened by uncontrolled or unregulated growth or development." The City's Zoning Ordinance, originally enacted on **[insert year]** with revisions generally adopted once or twice per year.

Although the Biddeford Zoning Ordinance is thorough and rooted in sound planning principles, it is often perceived by residents and City staff as "complex." In addition to base zoning districts with defined use and dimensional requirements, the Ordinance contains numerous supplemental standards, special provisions, overlay districts, regulatory policies, and procedural requirements. Over time, these cumulative layers have contributed to confusion about what is allowed and where. As a result, property owners and community members routinely seek guidance from the Planning and Code Enforcement Departments to navigate applicable standards and the necessary permitting and approval pathways.

Base Zoning Districts

The Zoning Ordinance includes **15** categories within its base zoning. The boundaries of those base zoning districts established pursuant to this Ordinance are delineated in detail on the Biddeford Zoning Ordinance: Base Zoning Districts map below (Fig. 4).

[Insert Figure. 4 Biddeford Zoning Map]

Zoning Districts Description

The base zones in the Zoning Ordinance are delineated below with summary descriptions. Tables with Dimensional Regulations by Zone are provided later in this section.

Classes of Zones:

a. Suburban Residential Zones to be known as SR Zones.
b. Coastal Residential Zones to be known as CR Zones.
c. Residential Zones to be known as R Zones.
d. Business Zones to be known as B Zones.
e. Industrial Zones to be known as I Zones.
f. Waterfront Zones to be known as W Zones.
g. Rural-Farm Zones to be known as R-F Zones.
h. Limited Rural-Farm Zones to be known as LR-F Zones.
i. Medical Zones to be known as M Zones.
j. Shoreland Zones to be known as RP-1, RP, LR, GD-1, GD-2, CFMA, and LC Zones.
k. Contract Zones to be known as CZ Zones.
l. Institutional Zones to be known as IN Zones.
m. Office Residential Zones to be known as OR Zones.
n. Main Street Revitalization District zones to be known as MSRD Zones.
o. Aquifer Protection Overlay Zones to be known as APO Zones.

General Description of Zones and Allowed Uses:

A. **Suburban Residential Zone (SR-1):** This district is primarily intended for single-family residential development, with limited allowances for home-based professional offices under specific conditions. The neighborhoods generally consist of single-family homes on larger lots, served by public sewer and water, or at a minimum, public water**.**

B. **Coastal Residential Zone (CR):** This district was established to recognize coastal areas with notable environmental or scenic value. Permitted uses are largely limited to single-family residences, with certain home offices allowed under specific conditions. Lot sizes within the zone vary based on underlying soil characteristics.

C. **Residential Zones:** There are four sub-residential zones based on density:

1. **R-1-A:** This district permits only single-family and two-family (duplex) homes. It is fully served by public water and sewer and is best described as an in-town neighborhood with predominantly single-family and duplex housing.

2. **R-1-B:** Similar to R-1-A, this district allows single-family and two-family residences and is also served by public water and sewer. It represents established in-town single-family and duplex/two-family neighborhoods.

3. **R-2:** This district supports higher-density residential development, allowing a range of multifamily housing options. Public water and sewer service are available throughout.

4. **R-3:** This district is designed to offer substantial flexibility in residential development, accommodating a broad mix of housing types on a variety of lot sizes.

D. **Business Zones:**

1. **B-1:** This district encompasses the in-town commercial core and permits a combination of commercial uses and multifamily residential development. Its purpose is to promote robust commercial activity while also encouraging the conversion of vacant factory structures and the use of upper floors in both existing and new structures for multifamily housing.

2. **B-2:** This district consists of highway-oriented commercial corridors where residential uses are not allowed.

E. **Industrial Zones:**

1. **I-1:** This district allows for general commercial and industrial uses.

2. **I-2:** This district is a more specialized industrial zone that permits a limited range of industrial activities. Proposals within this zone require review and recommendations from the Economic Improvement Commission.

3. **I-3:** Serving as a gateway into the City, this district places strong emphasis on the visual appearance of development. Projects must comply with enhanced design and landscaping standards, and new or renovated building facades are expected to feature brick or stone, with alternative materials considered on a case-by-case basis. Residential-style structures may also be permitted under similar discretionary review. The zone accommodates a mix of commercial and industrial uses; however, outdoor storage and display are prohibited except on parcels adjacent to Pomerleau Street that do not border Barra Road or Alfred Street (Route 111).

F. **Waterfront Zones:**
   1. **W-1:** Allows for a mixture of water-dependent or oriented commercial uses, including residential uses.

   2. **W-2:** Allows for commercial water-dependent uses.

   3. **W-3:** The Biddeford Pool Village Waterfront Zone that allows both water and non-water-dependent or oriented commercial uses, including residential uses.

G. **Rural-Farm Zone (R-F):** This district allows residential and agricultural use and allows exceptions for commercial uses.

H. **Limited Rural-Farm Zone (LR-F):** This district only allows for nonresidential uses, such as extractive operations, recycling, agricultural uses and open space.

I. **Medical Zone (M):** Medical offices and hospitals are allowed or other uses of that nature.

J. **Shoreland Zones**: See the next section, *Zoning Overlay Districts.*

K. **Contract/Conditional Use Zones (CZ):** Zones established through a negotiated agreement between a developer and the City Council, following Planning Board review. These zones permit uses that wouldn't ordinarily be allowed in the underlying district, but are considered appropriate due to their unique public or community benefits.

L. **Institutional Zone (IN):** The Institutional Zone is intended to support college and university activities while reducing potential negative impacts on the surrounding predominantly residential neighborhoods. All university-related uses, or any activities carried out by a college or university, must comply with an institutional master plan approved by the Planning Board.

M. **Office Residential Zone (OR):** The OR Zone is designed to guide the gradual transition of older residential areas along major roadways into a blend of residential and low-intensity nonresidential uses. Its intent is to allow existing homes to be adapted for small-scale office and service uses, as long as the area's architectural character is preserved, exterior displays remain minimal, and any proposed nonresidential conversions undergo site plan review.

N. **Main Street Revitalization District Zones (MSRD):**
   1. **MSRD-1:** This district serves as the commercial center, aiming to support business and residential growth while maintaining Biddeford's historic character.

2. **MSRD-2:** This district focuses on residential conservation, allowing medium-density housing while preserving the historic and residential character of existing structures, and supporting the upkeep and renovation of homes.

3. **MSRD-3:** This high-density, mixed-use district is intended to maintain the historic integrity of buildings while encouraging the transformation of vacant and underutilized mill properties into a lively blend of residential and commercial uses that strengthens the revitalization of the downtown.

O. **Aquifer Protection Overlay Zones (APO):** The APO Zone is intended to safeguard Biddeford's groundwater by limiting land uses and activities that occur over aquifers and recharge areas. Its purpose is to regulate the use and management of hazardous materials that could contaminate these resources, and to ensure that the city's aquifers are preserved as a reliable water supply for residents.

Dimensional Standards

Biddeford's Zoning Ordinance defines lot dimension standards by zoning classification, and these standards have been periodically amended as new conditions and regulatory requirements have emerged. The tables below provide the **dimensional and development requirements** for every zoning district within the City of Biddeford. These tables summarize the minimum lot sizes, frontage requirements, building setbacks, maximum building heights, and other development standards that apply to each district. Overall, the tables serve as a comprehensive reference for understanding the physical standards that govern land use and development across all zoning districts in the city.

These dimensional standards can be found in Article 5, as an attachment, *Table B: Dimensional Requirements* of the City of Biddeford Zoning Ordinance, and are summarized in Tables 4-6 below.

Functionally, these regulations establish a clear gradient across the city. In Biddeford's urban core and historic Main Street Redevelopment Districts (MSRD), dimensional requirements feature reduced setback distances, smaller lot sizes, and higher maximum lot coverages to accommodate walkable, compact development. As you move outward from the core, you transition into highway-oriented commercial zones, like the Highway Business (B2) Zone, or suburban residential areas, like the Suburban Residential (SR1) Zone. In these districts, the dimensional requirements scale upward, requiring more road frontage, deeper setbacks, and lower lot coverage thresholds to manage vehicle access and separate higher-intensity uses, before giving way to the Rural-Farm zones.

Table 2. Residential Dimensional Standards

Zoning District	Minimum Lot Size, Square Feet Per Unit A				Frontage			Minimum Setback, Feet**				Maximum Heights+	
	Water and Sewer	Water, No Sewer	Sewer, No Water	Neither Water Nor Sewer	Water and Sewer	Water or Sewer	Neither Water Nor Sewer	From Major R.O.W.	From Other R.O.W	Side	Rear	Stories	Feet
SR-1	15,000 C	20,000 C	20,000 C	40,000 C	100	100	200	40	25	10	10	3	35
CR	See Table C below				150	150	150	40	25	25	25	3	35
R-1-A	10,000 B	20,000	10,000	20,000	100	100	100	40	25	10	10	3	35
R-1-B	5,000 B	20,000	5,000	20,000	50	50	50	25	10	5	5	3	35
R-2	4,500 B	N/A	N/A	N/A	45	N/A	N/A	25	15	5	5	3	35
R-3, single-family	10,000	20,000	20,000	40,000	100	120	200	40	25	10	10	3	35
R-3, duplex	7,500 B	30,000	N/A	N/A	120	120	120	40	25	15	15	3	35
R-3, multifamily	15,000 1st 2 units, then 6,000/unit D	N/A	N/A	N/A	150	N/A	N/A	40	40	25	25	3	35

Table 3. Zoning Dimensional Standards

Zoning District	Minimum Lot Size, Square Feet Per Unit A				Frontage			Minimum Setback, Feet**				Maximum Heights+	
	Water and Sewer	Water, No Sewer	Sewer, No Water	Neither Water Nor Sewer	Water and Sewer	Water or Sewer	Neither Water Nor Sewer	From Major R.O.W.	From Other R.O.W	Side	Rear	Stories	Feet
R-3, all other	10,000	N/A	N/A	N/A	100	120	200	40	25	10	10	3	35
B-1 O	1,000	N/A	N/A	N/A	None	N/A	N/A	10	10	10	10	6	60
B-2 O	10,000 J	20,000	20,000	40,000	150	150	150	30	25	10	10	3	35
I-1 O	None	None	None	N/A	50	50	N/A	40 S	30 S	25 E, S	25 E, S	6	60
I-2 O	None	None	None	N/A	50	50	N/A	40 S	30 S	25 E, S	25 E, S	6	60
I-3 O	None	None	None	N/A	50	50	N/A	40 S	30 S	25 E, S	25 E, S	6	60
W-1	15,000 C	20,000 C	20,000 C	40,000 C	100	100	100	40	25	25	25	3	35
W-2	7,000	N/A	N/A	N/A	50	50	50	0	0	10	10	3	35
R-F, single-family M	20,000	20,000	20,000	40,000	120	120	200	40 H	25 H	25	25	3	35
R-F, duplex M	20,000	20,000	20,000	40,000	120	120	200	40 H	25 H	25	25	3	35
R-F, all other	40,000	40,000	40,000	40,000	200	200	200	40 H	25 H	25	25	3	35
Medical	10,000	10,000	10,000	10,000	100	100	100	40	40	25	25	6	60 K
LR-F	80,000	80,000	80,000 *N	80,000 *N	100	100	100	40	30	25	25	6	60
Institutional	See Note P				See Note P			See Note P				See Note P	
OR Q	4,500 B	N/A	N/A	N/A	75	N/A	N/A	10	10	10	10	3	35

Table 4. Main Street Revitalization District Dimensional Standards

Zoning District	Minimum Lot Size, Square Feet Per Unit A				Frontage			Minimum Setback, Feet**				Maximum Heights+	
	Water and Sewer	Water, No Sewer	Sewer, No Water	Neither Water Nor Sewer	Water and Sewer	Water or Sewer	Neither Water Nor Sewer	From Major R.O.W.	From Other R.O.W	Side	Rear	Stories	Feet
MSRD-1	None	N/A	N/A	N/A	None	None	None	None	None	None	None	Min. 2 stories or 26 feet; Max. 60 feet	
MSRD-2	2,000 B	N/A	N/A	N/A	50	N/A	N/A	15 R	15 R	None	None	3	35
MSRD-3	None	N/A	N/A	N/A	None	None	None	None	None	None	None	Min. 2 stories or 26 feet	

Please note that the PDF version of Table B also includes district-specific notes and exceptions that guide how structures may be constructed, expanded, or redeveloped. The notes are located under the “Notes for Table B” section.

Zoning Overlay Districts

In addition to the Base Zoning Districts, Biddeford’s Zoning Ordinance includes nine Overlay Districts:

Shoreland Overlay District (Article 14)

The Shoreland Overlay District (Fig. 4), despite its name, is not limited to coastal properties. Instead, it covers all land within 250 feet of water bodies and wetlands, and within 75 feet of protected streams.

Any property within these boundaries falls under the Shoreland Overlay Zone, which outlines specific dimensional requirements and identifies which land uses are allowed or prohibited in shoreland areas. Many activities within this zone require a permit from the Code Enforcement Officer (CEO).

a. Resource Protection (RP).
b. Resource Protection-1 (RP-1).
c. Limited Residential (LR).
d. Limited Commercial (LC).
e. General Development 1 (GD-1).
f. General Development 2 (GD-2).
g. Commercial Fisheries/Maritime Activities (CFMA).
h. Stream Protection (SP).
i. Waterfront Renaissance (WR)

A. **Resource Protection (RP) District:** This district includes areas in which development would harm water quality, productive habitat, biological ecosystems, or natural and scenic values. Geographically, this district includes the following areas:

1. Areas located within 250 feet (measured horizontally) of the upland edge of freshwater wetlands–or wetlands connected to great ponds and rivers–that the Maine Department of Inland Fisheries & Wildlife (MDIF&W) has identified as “moderate” or “high” value waterfowl and wading bird habitat, including nesting and feeding areas. These habitats are shown on GIS maps maintained by either MDIF&W or the Maine Department of Environmental Protection as of December 31, 2008.

2. Floodplain areas along rivers and along artificially created great ponds associated with rivers, as defined by the one-hundred-year floodplain shown on FEMA Flood Insurance Rate Maps or Flood Hazard Boundary Maps, or by the flood of record. If such mapping is unavailable, these areas are identified using soil types classified as recent floodplain soils. This district also includes one-hundred-year floodplains adjacent to tidal waters, as mapped by FEMA on its Flood Insurance Rate Maps or Flood Hazard Boundary Maps.

3. Areas of two or more contiguous acres with sustained slopes of 20% or greater.

4. Areas of two or more connected acres that contain wetland vegetation and hydric soils, but are not classified as freshwater or coastal wetlands, and that do not have a surface connection to a water body during periods of normal high water.

5. Land along rivers that is vulnerable to significant bank erosion, undercutting, or shifts in the riverbed, as well as land next to tidal waters that experiences severe erosion or large-scale soil movement, such as steep coastal bluffs.

6. The land area located on the west side of Granite Point Road, as depicted on the Official Zoning Map. See additional clarification on Granite Point, Article 14, Section 13.

B. **Resource Protection-1 District (RP-1):** The RP-1 District applies specifically to the Swan Pond Brook corridor. Because this area lies near the intake pipe for the City’s public water supply, Biddeford places high importance on restricting development that could harm water quality, wildlife habitat, or ecological systems within the corridor. The RP-1 District includes all land within 250 feet (measured horizontally) of the normal high-water line of Swan Pond Brook and its tributaries, as mapped on the City’s Official Zoning Map.

C. **General Development (GD-1) District:** This district includes the following types of existing, intensively developed areas:

1. Areas consisting of two or more adjoining acres that are used for commercial, industrial, or intensive recreational purposes–or a combination of these uses–including, but not limited to, the following:

   a. Areas devoted to manufacturing, fabricating, or other industrial activities;

   b. Areas devoted to wholesaling, warehousing, retail trade, and service activities, or other commercial activities; and

   c. Areas devoted to intensive recreational development and activities, such as, but not limited to, amusement parks, race tracks, and fairgrounds.

2. Areas that can be identified as having established patterns of intensive commercial, industrial, or recreational activity.

3. Some parts of the General Development 1 District may contain residential uses; however, an area cannot be designated as a General Development District if its only use is residential.

D. **General Development 2 (GD-2) District:** The General Development 2 District encompasses the same types of areas identified for the General Development 1 District. However, it is intended for newly designated General Development areas in which existing development is either limited or less intensive than that in the General Development 1 District. Some portions of the General Development 2 District may include residential uses, but an area cannot be classified as a General Development District solely based on residential development.

E. **Stream Protection (SP) District:** The Stream Protection District includes all land within 100 feet (measured horizontally) of the normal high-water line of a stream, as verified in the field. This does not include areas that fall within 250 feet of the normal high-water line of a great pond or river, or within 250 feet of the upland edge of a freshwater or coastal wetland. When a stream and its surrounding shoreland fall within those 250-foot areas, the land is regulated according to the Shoreland District associated with that particular water body or wetland.

   The upstream starting point of a stream is shown on the City of Biddeford's Official Zoning Map, unless the Zoning Board of Appeals determines otherwise under Article XIV, Section 10.

F. **Limited Residential (LR) District:** The Limited Residential District encompasses areas that are appropriate for residential and recreational development. It includes lands that do not fall within the Resource Protection District or Stream Protection Districts, and that are less intensively used than the Limited Commercial District, General Development Districts, or the Commercial Fisheries/Maritime Activities District. The Limited Residential District includes the following:

1. Land located within 250 feet (measured horizontally) of the normal high-water line of any great pond, river, or freshwater wetland, as well as land within 250 feet of the upland edge of coastal or freshwater wetlands shown on the Official Zoning Map and verified in the field, unless noted otherwise. Please refer to Article 14, Section 13 for additional information.

G. Limited Commercial (LC) District: The LC District encompasses areas with a combination of light commercial and residential uses, but excludes those within the Stream Protection District. Development in this zone is meant to be less intensive than in the General Development Districts, maintaining a maximum non-vegetated (impervious) surface limit of 20% per lot. It may also include commercial properties that existed prior to January 1, 1989. Industrial uses are prohibited.

For clarification, the LC District includes the following commercial **areas:**

1. The Shoreland Zone (as field-verified) that overlaps the W3 Zone located within Biddeford Pool Village.

H. **Commercial Fisheries/ Maritime Activities (CFMA) District:** The CFMA District includes areas where the prevailing pattern of development aligns with the permitted uses listed in the Table of Land Uses (Section 14), as well as other locations suitable for functionally water-dependent activities. Suitability is based on factors such as:

1. The depth of navigable water,
2. Shelter from adverse weather,
3. Proximity to established fishing grounds and marine infrastructure,
4. Availability of shorefront space for commercial docks and staging, and
5. Compatibility with surrounding maritime development.

[Insert Figure 5: Maps and Figures of the Overlays]

Floodplain Management

The City adequately identifies and protects its vulnerable coastal and riverine floodplains through active participation in the National Flood Insurance Program (NFIP). To ensure continued compliance with federal and state safety benchmarks, Biddeford updated its local Floodplain Management Ordinance (Article XII) in 2024 to mirror the newly issued Federal Emergency management Agency (FEMA) Flood Insurance Study and updated Flood Insurance Rate Maps (FIRMs) for York County. This local ordinance is consistently enforced by the Code Enforcement Officer, acting as the local Floodplain Administrator, who oversees a mandatory Flood Hazard Development Permit system. By strictly maintaining these updated performance standards, such as enforcing freeboard requirements that elevate the lowest floors of new residential structures in AE zones at least one foot above base flood elevation, Biddeford effectively reduces local flood vulnerability while maintaining state and federal regulatory consistency.

Site Plan & Subdivision Regulations

The City of Biddeford governs local land development through a coordinated framework established under Article XI (Site Plan Review) of the Land Development Regulations and Chapter 66 (Subdivisions) of the Code of Ordinances. These ordinances scale review requirements based on project intensity, utilizing a multi-stage Planning Board process to guide major subdivisions and commercial development toward areas with compatible infrastructure. The city's performance standards actively enforce smart growth principles by requiring pedestrian-oriented circulation, architectural scale compatibility in historic and downtown zones, and strict buildable lot constrains that deduct unbuildable land, such as wetlands, steep slopes, and the 100-year floodplain, from gross density calculations.

These regulations embed rigorous environmental performance standards directly into the local approval process to protect critical natural resources from the cumulative impacts of development. Biddeford addresses non-point source pollution and watershed protection by mandating that post-development stormwater runoff rates do not exceed pre-development levels, utilizing low-impact development (LID) strategies. Furthermore, the land use rules reinforce the distinction between growth and rural sectors by tying final project signoffs to verified public utility capacities or certified state subsurface wastewater compliance. Together, these regulatory tools ensure that current development patterns conform to the land use districts, density targets, and resource protections established throughout this plan.

Permitting and Approvals Processes

Biddeford's local development review system involves clear, multi-tiered permitting and approvals process designed to enforce the spatial and environmental goals of the Comprehensive Plan. Major developments, subdivisions, conditional uses, and projects within the Shoreland Zoning or Historic Districts are subject to a structured, three-tiered Planning Board evaluation, advancing from a preliminary sketch plan review through detailed technical analysis and final plan approval. To streamline smaller-scale

commercial infill and modifications that align with smart growth goals, the City utilizes a Staff Review Committee (SRC). This delegated administrative body provides a faster, coordinated technical review for minor site plans while ensuring strict adherence to municipal performance standards and avoiding unnecessary planning board backlogs.

Once land-use of subdivision approvals is granted, the implementation mechanism shifts to the Code Enforcement Office and Engineering Department to manage construction compliance. No structural development can occur without a building permit, which requires detailed architectural, mechanical, and site plans conforming to the International Building Code (IBC) and local zoning constraints. For projects impacting public infrastructure, the city mandates a pre-construction coordination process backed by dedicated inspection fees to fund third-party peer reviews and erosion control monitoring. The final regulatory step is the Certificate of Occupancy, which is strictly withheld until the Engineering Department verifies public sewer impact fee payments and physical connection compliance, and the Code Enforcement Officer certifies complete adherence to all Planning Board conditions and state internal plumbing and electrical rules.

Board of Appeals

Biddeford's Zoning Board of Appeals (ZBA) serves as the quasi-judicial safety valve of the land use framework, ensuring that the application of local regulations respects constitutional property rights while maintaining the integrity of the Comprehensive Plan. Appointed by the Mayor, this five-member citizen board holds the authority to hear administrative appeals challenging decisions or interpretations made by the Code Enforcement Officer or the Planning Board, alongside evaluating requests for dimensional variances. To safeguard local growth boundaries and prevent ad-hoc zoning erosions, the ZBA is strictly prohibited from granting use variances and must enforce the state's rigorous five-part undue hardship criteria, requiring proof that the property cannot yield a reasonable return due to unique physical constraints rather than personal or economic circumstances.

Operating under strict statutory timelines, aggrieved parties must file an appeal within 30 days of a contested decision, triggering a formal public hearing process that requires broad abutter notification within 200 feet. The board's review relies strictly on the formal record established through oral testimony and predefined documentary evidence, requiring a majority vote to reverse and administrative action or approve a relaxation of dimensional rules. Final approvals are tightly bound to execution deadlines, requiring the recipient to secure a building permit within one month of a variance being granted, while any further recourse for contested ZBA decisions must be brought directly to the Maine Superior Court.

Planning Board

The Planning Board holds reviewing and acting authority over subdivisions, projects subject to Site Plan Review, and specialized environmental and land use requests, including certain Shoreland Permits and Conditional Use Permits. Additionally, the Board plays a critical role by periodically preparing and revising the City's Comprehensive Plan. Under Biddeford's regulatory framework, the Planning Board is responsible for reviewing applications for major residential, commercial, and institutional principal uses. These specifically include single-family-attached developments, two-family and multi-family residential complexes, elderly and senior housing facilities, mobile home parks, and large-scale commercial or industrial establishments that exceed local administrative review thresholds.

City Capacity

At the inception of the Biddeford Comprehensive Planning process, the City had one planner on staff in the Planning Department, who was responsible for managing the City's planning processes, zoning issues, proposed development, land-use policies, and staffing the Planning Board. A second planner was hired in late January 2022, and naturally, spearheaded the Comp Plan.

During the planning process, specific administrative capacity comments were made by community members, including that the Planning and Code Enforcement Departments could use more staff to help the public understand the complexities of the Zoning Ordinance, other land use regulations, permitting, and development review processes, and other building, infrastructure, and land development requirements. The Code Enforcement Department has indicated a desire for additional staff to maintain the quality and timeliness of its land-use regulation and other municipal services.

In addition, the current capacity and permitting application processes in City Hall does not support data collection and analysis needed to understand the trends in land use development in Biddeford. There is no digital compilation of issued permits, including permit type and details, that would enable Biddeford to easily see development trends and use data to shape policies.

However, the City just recently switched to CivicPlus Community Development, an online permitting system that will streamline permitting processes, increase productivity, and enable self-service for efficient growth. The software includes a built-in tool for quantifying data, enabling an understanding of land-use development trends. Ultimately, answering the question, what percentage of development has occurred in Growth Areas versus Rural Areas of Biddeford?

Recent Development Patterns

The City has experienced substantial growth concentrated primarily in two distinct hubs: the historical Downtown/Pepperell Mill complex and western Biddeford along the Alfred Street corridor.

In the Downtown area, revitalization was catalyzed by the City's 2012 purchase and closure of the Maine Energy Recovery Company (MERC) waste-to-energy incinerator. This pivotal move spurred extensive mixed-use and residential redevelopment across over a million square feet of former textile mill buildings. Completed and approved downtown projects, including the Riverdam, Lincoln Mill, and the Fathom development, have introduced hundreds of market-rate and low-to-moderate-income housing units, alongside a new 644-space municipal parking garage, boutique hotel space, and the Pearl Point Park with a pedestrian bridge connecting residents to the Saco Transportation Center.

Table 5. Recent Developments in Downtown/Pepperell Mill

Project	Type	Housing Units
Fathom	Mixed-use	191
Westbrook Development Corporation	Senior Housing	90
Lincoln Mill	Mixed-use	140
Lincoln Mill	Hotel	35
Pepperell Building 11	Residential	76
Pepperell Building 19 & 20	Residential	64
Saco-Lowell	Residential	96
The Levee	Residential	83
Adam's Point	Residential	39
2 York	Residential	11
69 Elm Street	Residential	14
Riverdam	Residential	70

Concurrently, western Biddeford has emerged as a major residential and commercial service areas, with intense development localized between Andres Road and Barra Road. This corridor has absorbed significant housing expansion through large-scale projects like The Eddy and Devine Capital, as well as essential affordable housing initiatives spearheaded by Avesta and Westbrook Development Corporation slated through 2027. Supplemented by robust commercial footprints such as the Biddeford Crossing Shopping Center and major big-box retailers, western Biddeford complements the downtown's urban density. Moving forward, the City anticipates continued, self-sustaining investment and redevelopment in both sectors, driven largely by the influx of new residents.

Table 6. Recent Developments in Western Biddeford

Project	Type	Housing Units
The Eddy	Residential	250
Devine Capital	Residential	216
Avesta Housing	Low/Moderate Income	46
Westbrook Developments Phase 1	Low/Moderate Income	40
Westbrook Developments Phase 2	Senior Housing	37

Vision Alignment

Recent development in Biddeford is occurring primarily within large-scale, planned mixed-use developments and major master-planned residential complexes, rather than on an incremental, lot-by-lot basis. This is evidenced in the downtown core by the sweeping, multi-phased adaptive reuse of the million-square-foot Pepperell Mill Complex and the coordinated master plan of the former MERC site. Similarly, the growth in Western Biddeford consists of high-density, multi-family master planned developments like The Eddy (250 units) and Devine Capital (216 units), alongside coordinated phased affordable housing complexes by Avesta and Westbrook Development Corporation. By utilizing unified planned developments, the City has been able to secure critical public infrastructure, such as the 644-space municipal parking garage and the Saco River pedestrian bridge.

The recent development pattern is consistent with the community's vision, which prioritizes smart growth, transit-oriented development, and the prevention of low-density rural sprawl. By directing a vast majority of new residential units into the designated downtown urban growth area and the existing Alfread Street commercial service corridor, the city is actively fulfilling its Future Land Use Plan goals to build complete neighborhoods. This concentrated, high-density infill allows the city to efficiently utilize existing public water, sewer, and transit infrastructure. Furthermore, the deliberate integration of low-to-moderate-income family and senior housing within these planned developments directly matches Biddeford's stated commitment to addressing the housing crisis with diverse, equitable, and walkable housing choices.

Projected Development Needs

To accommodate anticipated residential and commercial growth over the next decade, Biddeford relies primarily on the redevelopment of underutilized urban parcels and master-planned infill rather than the consumption of raw, undeveloped acreage. The City anticipates continued growth pressures over the next 10 years to be concentrated within two designated areas, both of which possess more than enough land and structural capacity to absorb new development.

Downtown Core

The majority of downtown is already densely developed so much of the growth will continue to be redevelopment within and around the million-square-foot Pepperell Mill. However, within the downtown is also approximately 25-acre contiguous area which is predominantly vacant. Most of this property was formerly owned by the Diamond Match Company, which tragically burned to the ground in 1964 and has remained undeveloped. Located to the north of Elm Street, south of the Saco River and east of Main Street, this site is uniquely positioned to accommodate between 250 to 500 housing units within a mixed-use development featuring a pedestrian promenade along the Saco River and public open space.

Western Biddeford

The City also anticipates continued development activity within western Biddeford, utilizing currently vacant commercial lands and/or redeveloping commercial and industrial properties adjacent to the Alfred Street corridor to fulfill local housing and service demands.

Future Growth Management Framework

While the City's current regulatory framework relies on baseline zoning districts established to manage growth, achieving the forward-thinking goals of the 2023 Vision requires a modernized suite of tools. A comprehensive analysis of the specific regulatory and non-regulatory measures necessary to guide this growth is included in the Future Land Use Chapter. Aligning these tools directly with the Future Land Use Map ensures that Biddeford's implementation strategies are tied to the City's long-term vision for managing growth.

Existing Land Use	✓	Page
Analyses		
Is most of the recent development occurring: lot by lot; in subdivisions; or in planned developments? Is recent development consistent with the community's vision?	✓	pp. 17-18
What regulatory and non-regulatory measures would help promote development of a character, and in locations that are consistent with the community's vision?	✓	p. 19 Covered briefly, but I think this fits in better in the Future Land Use Chapter, as I was not comfortable making specific recommendations
Is the community's administrative capacity adequate to manage its land use regulation program, including planning board and code enforcement officer?	✓	pp. 15-16
Are floodplains adequately identified and protected? Does the community participate in the National Flood Insurance Program? If not, should it? If so, is the floodplain management ordinance up to date and consistently enforced? Is the floodplain management ordinance consistent with state and federal standards?	✓	p 13 May want to include a map, unless there's already a map somewhere else in the plan?
Condition and Trends		
An existing land use map, by land use classification (such as mixed-use, residential, commercial, institutional, industrial, agricultural, commercial forests, marine, park/recreational, conserved, and undeveloped land).	✓	pp. 1-2 Still need a map
A summary of current lot dimensional standards.	✓	pp. 7-9
A description or map identifying the location of lots and primary structures created within the last ten years. Include residential, institutional, commercial, and industrial development.	✓	pp. 16-17
Provide a brief description of existing land use regulations and other tools utilized to manage land use, including shoreland zoning, floodplain management, subdivision, site plan review, and zoning ordinances.	✓	pp. 3-13 may want to include a zoning map too
Estimate the minimum amount of land needed to accommodate projected residential, institutional, commercial, or industrial development at least ten (10) years into the future.	✓	pp. 18-19
Policies		
None Required		
Strategies		
None Required		

Comments:

FUTURE LAND USE

0 0.28 0.55 1.1 Mile

0 1,250 2,500 5,000 Feet

This map was reviewed and approved by the Biddeford Planning Board and Biddeford Conservation Commission on May 20, 2026.

- Parcels (2026)
- Water
- Conserved Lands (2026)
- Recreation & Parks

GEOGRAPHY

- Resource Protection
- Railroad
- Maine Turnpike (I-95)
- Roads (MDOT 2026)
- Eastern Trail

GROWTH AREAS

- Downtown Core
- Urban Residential
- Suburban Residential
- Commercial & Industrial
- Institutional

TRANSITIONAL AREAS

- Suburban Transitional

RURAL AREAS

- Rural Farm
- Coastal Residential

Map drawn 5/26/2026 by SMPDC.

Patrick Johnson MaineDOT, Kevin Riley MaineDOT, Jeff Pitcher MaineDOT, Jon Prendergast MaineDOT, George Jackman MaineDOT, Nate Moulton MaineDOT, Bob Bistrias Maine Office of GIS, Jeff Beecher, MaineIT GIS, Maine GeoLibrary, MaineDOT, USGS, USDC, Census Bureau

Add Section 6. titled “Transitional Areas”

6. Transitional Areas

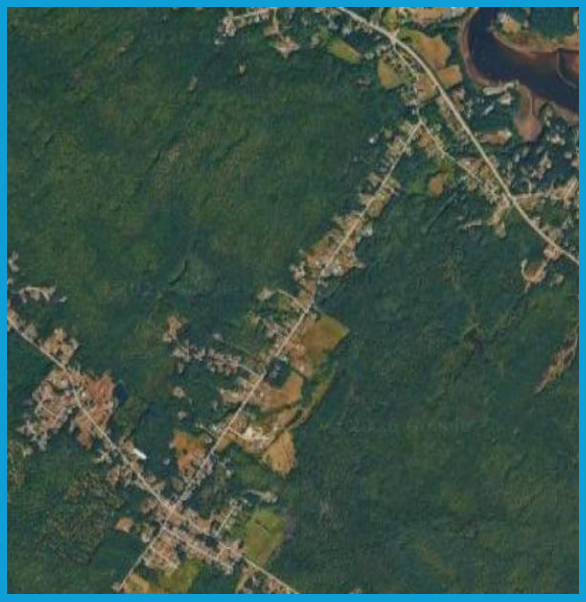
The area surrounding Guinea Road from the intersection of West Street (Guinea Corner) to the intersection of Meeting House Road (Tattle Corner) has been identified as a transitional area. This area was once designated as a growth area, but analyses in this Comprehensive Plan have identified significant natural resource assets in the undeveloped blocks to the northwest, bounded by this road and West Street. While the Guinea Road area has seen development in the last 10 years, it is primarily residential and single-family housing. Moors Brook and its tributaries also run along the Guinea Road corridor. This area bridges sections of the community identified as Growth Areas and Rural Areas. This means that development and future zoning along this corridor should be carefully considered to support West Street and Route 9 development while remaining undeveloped enough to connect areas of significant wildlife habitat.

GUINEA ROAD

Corridor bridging Suburban Residential and Rural Farm areas.

GOALS:

Consider future zoning to align with natural resource goals for the undeveloped areas to the northwest and growth areas at the intersections.



9 Historic, Cultural & Archaeological Resources

1. Biddeford's Story

Biddeford has a long and storied history dating back many centuries. Before Europeans first arrived in the early 17th century, Native peoples lived along the Saco River, taking advantage of its abundant fishing and easy transportation.

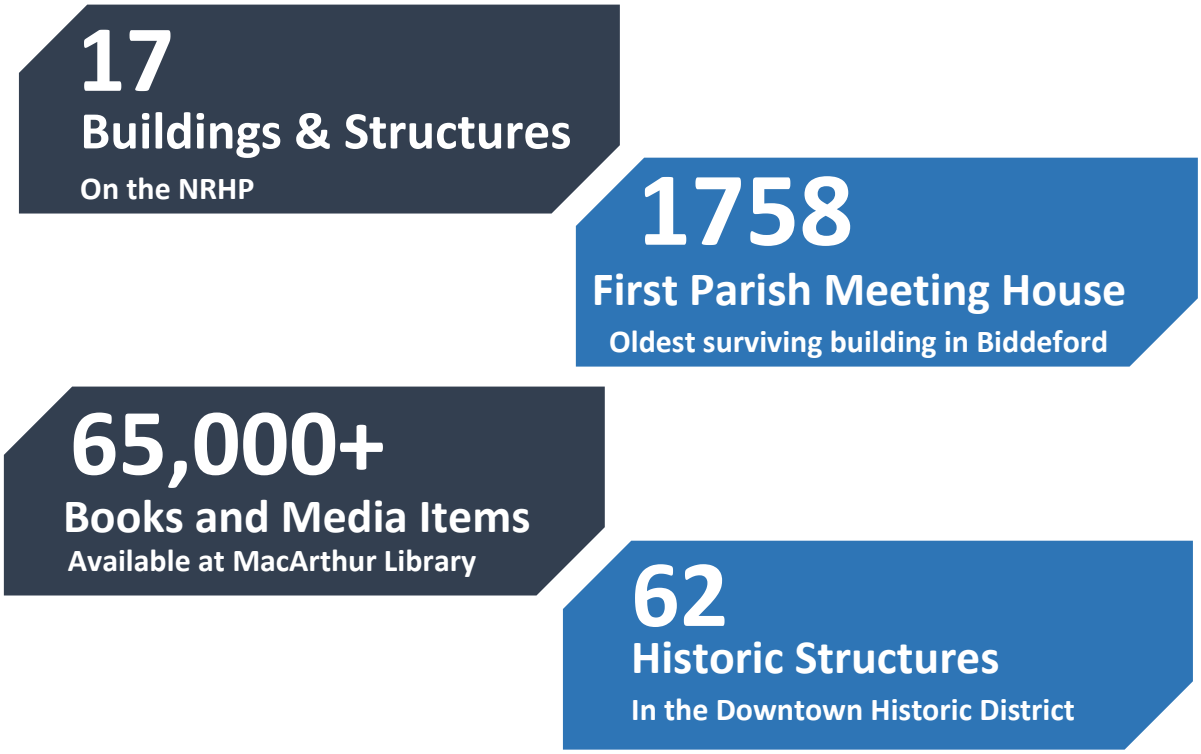
European explorers arrived in what is now Biddeford in 1603, one of the earliest European settlements in North America followed soon after in 1611. The Biddeford pool area was permanently settled in 1626, followed soon after by additional settlements further up the Saco River. For the next 100 years, Biddeford grew slowly as an important stop on the "Kings Highway" linking Falmouth (Portland) and Boston. By the time of the American Revolution, Biddeford was a thriving small community of about 1,000 people with an economy based largely on farming and forestry.

Beginning in the mid-19th century, textile mills became the dominant force in the city's economy and began to dramatically reshape the community. Thanks to the city's advantageous position near major markets, railroads and abundant hydropower, Biddeford grew to become one of the largest textile manufacturing cities in the country by the end of the 19th century. The textile industry employed thousands of people and was an economic engine for the city and the region. Migrants from Canada and Europe flocked to Biddeford to find work in the mills and start a new life in the United States.

The growth of the mills also led to the growth of Biddeford's downtown, as a number of business and shops emerged to cater to the large workforce in the mills.

However, after World War II, the textile industry in New England began to decline as manufacturing moved to other states or overseas. Biddeford's once thriving mills began closing in the 1950's and the city's traditional urban core began to struggle as development and investment moved into the suburbs. In the 1980's, the community began to see a resurgence as new investment lead to redevelopment of the former Textile mills.

2. Historic and Cultural Resources Today



3. Biddeford's Historic and Archaeological Preservation

Historic Preservation

The Biddeford Historic Preservation Commission protects the historic and architectural heritage of our city and its historically significant areas, landmarks, and sites, while accepting compatible new construction as needed for the city to grow. Biddeford is home to dozens of historically significant buildings and structures, especially in the downtown. It is the duty of the HPC to protect and defend these structures, and to preserve the essential character of historic neighborhoods in such a way that enhances and improves the value of properties. Historic preservation can play a role in economic development of Biddeford by making it more desirable place to live and work, and by encouraging place-making and place-keeping that can help draw in new visitors to our city.

The Code of Ordinances of the City of Biddeford grants the Historic Preservation Commission the authority to review all construction projects in the three Main Street Revitalization District (MSRD) land use zones to ensure compliance with preservation practices. The HPC adheres to the standards set by the U.S. Department of the

Interior's Standards of Rehabilitation while also taking into consideration the City's Code of Ordinances.

The HPC considers projects taking place within the MSRD-1, MSRD-2, and MSRD-3 Land Use Zones.

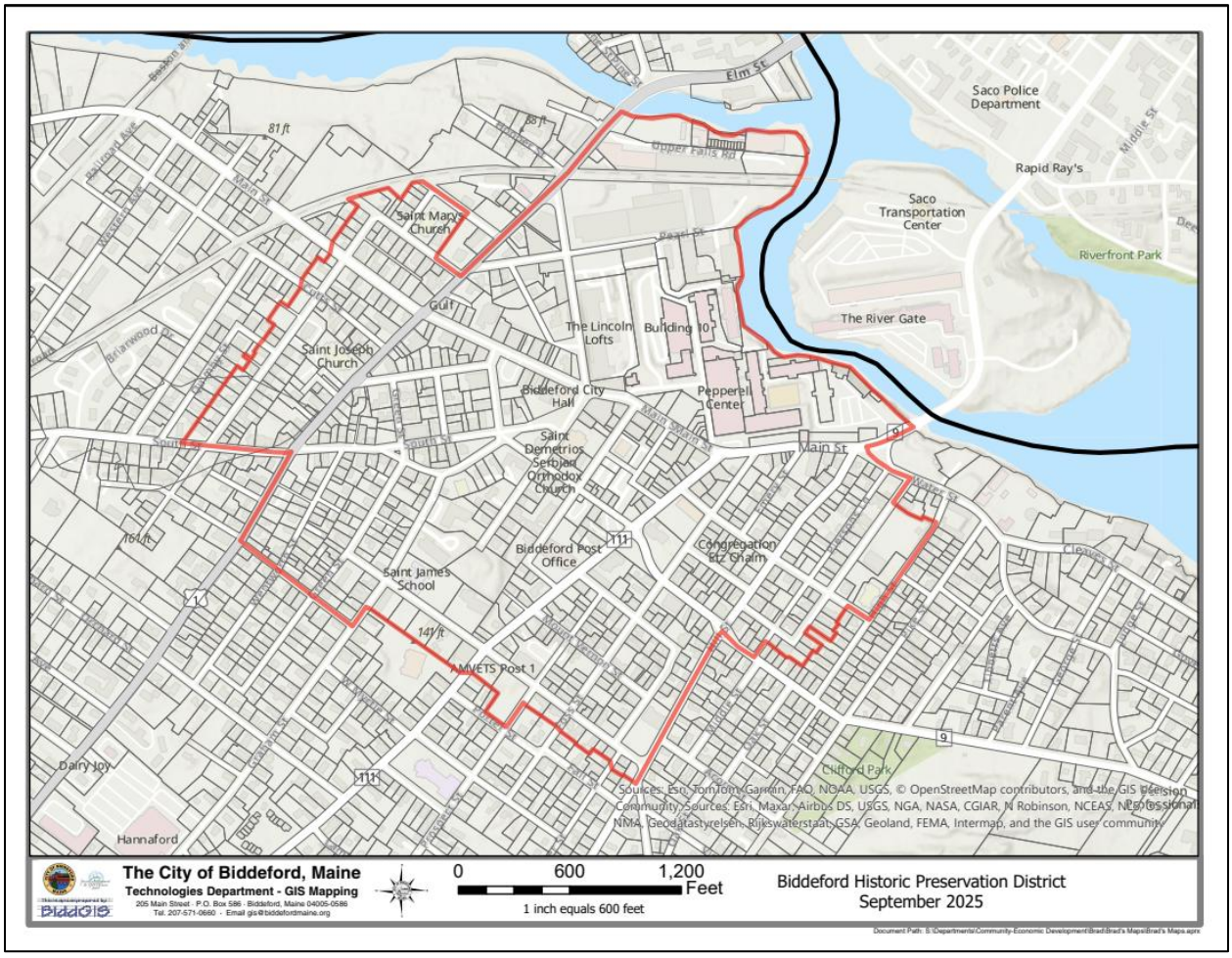


Table 9-1: Biddeford Historic Sites on the National Register of Historic Places, 2020			
Name	**Address**	**Approx. Year Built**	**Year Added to the National Register**
First Parish Meeting House	Old Pool Road	1758	**1972**
Biddeford City Hall, Including City Theater	205 Main Street	1895	**1973**
U.S. Post Office	35 Washington Street	1914	**1973**
Fletcher's Neck Lifesaving Station	Ocean Avenue	1874	**1974**
John Tarr House	29 Ferry Lane	c. 1730	**1980**
Dudley Block	28-34 Water Street	1848	**1982**
St. Joseph's School	Birch Street	1887	**1984**
Wood Island Light Station	Wood Island	1808	**1988**
Biddeford-Saco Mills Historic District	See Map	Various	**2008**
Biddeford Main Street Historic District	See Map	Various	**2009**
Emery School	116 Hill Street	1912	**2011**
St. Andre's Parish	41 Sullivan Street	1900	**2015**
Timber Point	1-2 Timber Point Road	1931-1954	**2016**

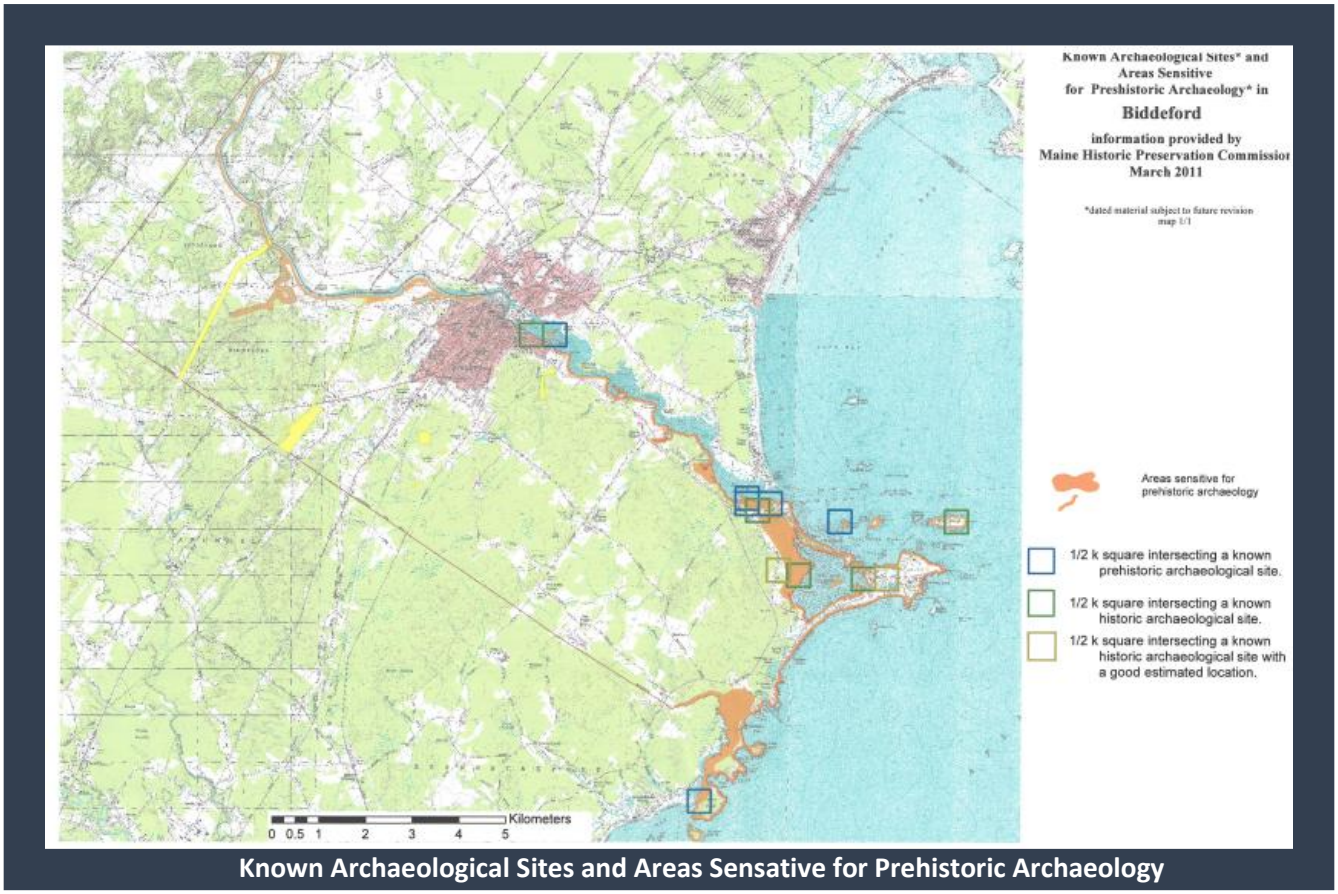
Source: *National Register of Historic Places.*

Archaeological Resources

Biddeford has a number of archaeological sites spanning centuries of human habitation. A large number of these sites can be found in the Biddeford Pool area, where both indigenous peoples and European settles have fished, farmed and lived for many hundreds of years. The coastal area of Biddeford is also home to a number of shipwreck sites.

There are nine prehistoric archaeological sites known in Biddeford. Eight of these may be significant or are known to be significant. Several of the sites known to be significant are located on the campus of the University of New England (UNE). These sites are

villages or farmsteads that were still present and inhabited when the area was visited by Samuel de Champlain in 1604.



Known Archaeological Sites and Areas Sensative for Prehistoric Archaeology

The Maine Archaeological Society, Inc. published an article of interest in Spring of 2006 that reviews the “Chouacoet Site” which is located on the site of the present UNE campus According to the article’s author, Richard J. Lore, Samuel de Champlain visited the Chouacoet Site near the mouth of the Saco Rive River and found an Armouchiquois Indian village.

During construction of several buildings on the University of New England Campus, a number of archaeological sites were monitored and some artifacts were recovered. In future surveys related to development projects it is noted in the University of New England Campus Master Plan that the majority of the rest of the site of proposed development on the campus as having been “extensively disturbed” and no further significant archaeological resources have been discovered.

Table 9-2. Biddeford Archaeological Sites			
Site Name	**Site #**	**Site type**	**Periods of Significance**
Winter Harbour	ME 041-001	Settlement	1616-1617, 1630-1675, 1708-1775
Saco Fort	ME 041-002	Military, Fort	1676-1725 (1693-1708)
Fleetwing	ME 041-003	Wreck, Schooner	March 2, 1891
Anahuac	ME 041-004	Wreck, Screw	April 15, 1923.
George and Albert	ME 041-005	Wreck, Schooner	November 17, 1887
Marshall Perrin	ME 041-006	Wreck, Schooner	November 16, 1907
Fred Tyler	ME 041-007	Wreck, Schooner	October 27, 1920
Roger Drury	ME 041-008	Wreck, Schooner	January 12, 1918
Biddeford Pool Dugout Canoe	ME 041-009	Wreck, Canoe	c. 1630 to 1900
Biddeford Pool Wharf	ME 041-010	Wharf	c. 1750- c. 1800
Thomas Williams	ME 041-011	Domestic	c.1636 - c.1689
Richard Hitchcock	ME 041-012	Domestic	c.1636 - 1676 or 1689
Edward's Farm #1	ME 041-013	Domestic	c. 1636- c. 1689
Hitchcock's Point #1	ME 041-014	Structure, Unidentified	c. l770
Hitchcock's Point #2	ME 041-015	Structure, Unidentified	c. l850
Stackpole - Jordan	ME 041-016	Domestic	c. 1717 - present
'Hiawatha'	ME 041-017	Wreck, Schooner	November 1860
'William and Harris'	ME 041-018	Wreck, Schooner	November 1840
'Game Cock'	ME 041-019	Wreck, Schooner	1867
'Rara Avis'	ME 041-020	wreck, gas screw	1893-1918
'Washington'	ME 041-021	Wreck, Schooner	1856
'Nellie Grant'	ME 041-022	Wreck, Schooner	1869
'C.N. Gilmore'	ME 041-023	Wreck, Schooner	1876-1925
'Valetta'	ME 041-024	Wreck, Schooner	Wrecked on Wood Island on October 28, 1909.
'Queen of the West'	ME 041-025	Wreck, Schooner	1898
Wood Island Lighthouse	ME 041-026	Lighthouse	Original light house station built in 1808
'Livelihood'	ME 041-027	Wreck, Schooner	November 28, 1925
'Augusta'	ME 041-028	Wreck, Schooner	Information Not Provided
'Jessie Lena'	ME 041-029	Wreck, Schooner	March 13, 1912

4. Cultural Resources

McArthur Library

Founded in 1863, McArthur Library is one of the oldest publicly funded libraries in New England.

The mission of McArthur Library is to connect the Biddeford community with materials, programs, services, and informational and cultural resources needed to lead fuller, better, and richer lives. McArthur Library is also home to the Biddeford Historical Society and the Franco-American Genealogical Society collections

Today, the library offers over **59,000** books and over 7,000 e-books, audiobooks and magazines. The library also has an extensive collection of audio-visual media.

Library services are available for free to residents of Biddeford and students at the University of New England.

In 2019, McArthur Library welcomed 115,000 visitors and circulated more than 120,000 items.

McArthur Library hosts hundreds of programs and community events each year which are attended by over 10,000 people.

City Theater

Biddeford City Theater is located adjacent to Biddeford City Hall on Main Street. It is managed by City Theater Associates, Inc., which is a non-profit organization, housed with the Theater. Its mission is "to foster an appreciation for the performing arts by using creative avenues to increase community involvement."

The City Theater has been in continuous operation for 125 years. Today, it hosts concerts, films, plays and performing artists throughout the year. City Theater serves as a venue for Heart of Biddeford events and seasonal downtown festivals such as Winterfest.

Biddeford Mill Museum

The Biddeford Mills Museum (BMM) was established in 2011. It is overseen by a dynamic board of directors who are devoted to seeing the Biddeford Mills Museum find a permanent space in Biddeford where they can display and care for their collections and offer interactive exhibits, classes and walking tours that tell the history of the mills and the pivotal role they played in shaping Biddeford.

Engine

Engine was established in 2010 and was "Founded on the belief that artistic expression and creative vibrancy are the gateway to cultural, social, and economic revitalization,

Engine's Mission is "To make arts-driven programming, cultural development, and sustainable creative entrepreneurialism an explicit community value and civic priority in Biddeford."

Engine partners with the UNE to hold student and faculty art shows at its Main Street gallery and also organizes an ArtWalk on the final Friday of every month. Engine also oversees the public art committee, which guides investment in public art throughout the community.

Biddeford Historical Society

The Biddeford Historical Society (BHS) works to preserve, promote and interpret Biddeford's long and rich history.

BHS works to preserve historic sites and artifacts and maintains an extensive archive of historic materials. BHS also hosts classes, workshops and walking tours of Biddeford's historic sites.

Biddeford Museum in the Streets

The Museum in the Streets is a walking tour of Downtown Biddeford and follows a series of signs highlighting important historical features in the heart of Biddeford. It was developed by the Biddeford Historical Society.

Heart of Biddeford

Heart of Biddeford (HoB) is a volunteer-driven organization that works in partnership with the City of Biddeford, the business community, property owners, and residents to foster economic development and improve quality of life in downtown Biddeford by supporting existing businesses, attracting new businesses, promoting the downtown through events, and working to beautify the urban core.

5. Challenges and Opportunities

Historic Preservation and Economic Development

In a 2011 economic impact report for Maine Preservation titled ***The Economic and Fiscal Impact on Maine of Historic Preservation and The State Historic Preservation Tax Credit Planning Decisions*** examined the impact historic rehabilitation projects had between 2007 and 2011. The report notes that this was a recession period of the economy which had a significant negative impact on the construction industry in Maine for this period. For example, unemployment in the construction sector rose from 6.5% to 14.2%, housing starts fell in half, and commercial construction activity severely declined.

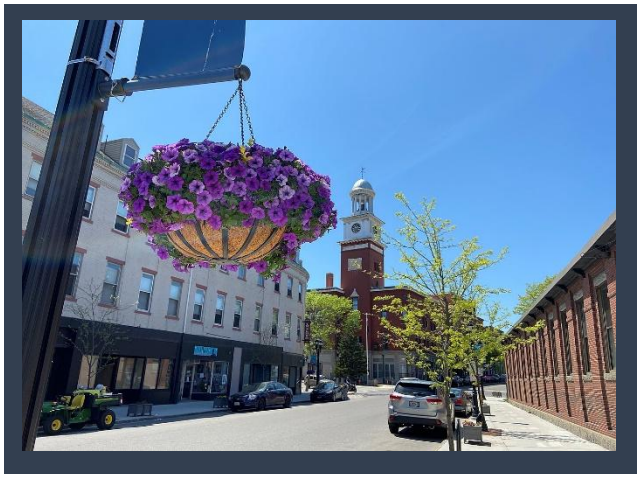
During the same period, however, the report notes that the value of historic rehabilitation activity increased from $7 million in 2007 to $40 million in 2011. In 2011 alone, tax credit sponsored Historic Rehabilitation were anticipated to support nearly 800 Maine jobs and $30 million of income.

In addition, according to this same report, 25 historic tax credit rehabilitation projects were anticipated to have been completed between 2007 and the end of 2011, with an anticipated increase in Maine's property tax base by $135 Million. Further, these projects, although resulting in an estimated $3.5 million loss to the State through the tax credit, would add $2.6 million in additional State income and sales tax revenues and an additional $1.9 million in municipal property tax revenues.

- **Maine workers benefit more from historic preservation than new construction. A higher proportion of every dollar spent on historic rehabilitation goes to Maine craftspeople than individuals out of State in comparison to every dollar spent on construction.**
- **The Maine tax credit is typically coupled with the 20% Federal Historic tax credit, which can attract out-of-state investors, thereby bringing money into Maine and promoting economic development.**

Biddeford Main Street Historic District

The Biddeford-Saco Mills Historic District was added to the National Register of Historic Places in December 2008. It is roughly bounded by Pearl Street, Lincoln Street, York Street, Laconia Street, Main Street (Biddeford), and Main Street and Gooch Street in Saco. The buildings are generally characterized as being in good condition and that they retain adequate integrity so as to represent their significance as components of a mid-nineteenth to mid-twentieth century downtown. The downtown historic district also includes three parks.



The Main Street Historic District consists of over 50 structures built between 1846 and 1952.

These building form a cohesive group that conveys the significance of the district as a social and commercial center of Biddeford.

Biddeford / Saco Mills Historic District

The Biddeford-Saco Mills Historic District was added to the National Register of Historic Places in December 2008. It is roughly bounded Pearl Street, Lincoln Street, York Street, Laconia Street, Main Street (Biddeford), and Main Street and Gooch Street in Saco. It is characterized by its significance in the industrial history of Biddeford and its architecture which is a mix of Mid-19th Century/Greek Revival, Late Victorian/Italianate, and Modern Movement/Tanate.

According to the National Register of Historic Places:

"The Biddeford/Saco Mills Historic District is a cohesive collection of historic manufacturing buildings situated on roughly 38 acres of land flanking the Saco River. The district includes 13 properties in the city of Biddeford and the entirety of, or portions of six properties within the Saco city limits and is located adjacent to the downtown commercial areas of both cities. The river, which separates the two municipalities, runs through the district roughly north to south, with Biddeford on the west bank and Saco to the east…."

Biddeford-Saco Mills Historic District

Historic Architectural Survey

In Fall of 2022, The Biddeford Historic Preservation Commission embarked on a project to document historic buildings in the downtown and surrounding areas of the city. This project is called an Architectural Survey, and will be conducted by Kleinfelder, Northeast, Inc., a consultant the City hired through a competitive RFP process. Biddeford is fortunate to have a rich assortment of historic buildings, and this survey will record the wide range of buildings its history reflects, dating from the 1700s through the early 1970s.

The project will begin on or around November 1, 2022 and is expected to be completed by September 30, 2023. The Biddeford Architectural Survey is supported in part by a grant administered by the National Park Service, Department of the Interior and the Maine Historic Preservation Commission.

Historic, Cultural & Archaeological Resources

What Comes Next?

EDUCATE citizens and property owners about the value of historical, archaeological, and cultural preservation.

PROTECT Biddeford's historic, cultural and archaeological resources to the greatest extent possible

REDUCE The impact of climate change and sea level rise on Biddeford's historic, cultural and archaeological resources.

SUPPORT arts and culture facilities, events and the "creative economy" throughout Biddeford.

Goal 1

EDUCATE

Educate citizens and property owners about the value of historical, archaeological, and cultural preservation.

How We Get There:

- Promote and support Downtown Biddeford, including the Mill District, as the historic and cultural core of the City.
- Continue to support the efforts of the Biddeford Historical Society, the Biddeford Historic Preservation Commission, and other entities such as the Biddeford Mills Museum, in promoting Biddeford's history and historic resources
- Support the implementation of the Biddeford Cultural Plan, completed in November 2021.

Goal 2

PROTECT
Biddeford's historic, cultural and archaeological resources to the greatest extent possible.

How We Get There:

- Maintain Biddeford's accreditation as a Certified Local Government (CLG) community.
- Building on Biddeford's new CLG status, begin a comprehensive community survey of historic buildings and structures in Biddeford. priority areas most at risk to loss. Potential match funds are available as a CLG community through the State Historic Preservation Office (SHPO).
- Identify historic resources that are at risk of loss or damage due to climate change impacts.
- Amend the land development regulations to require that projects subject to Planning Board (or its designee) review incorporate maps, information, and comments available from the Maine State Historic Preservation Office (SHPO).
- Ensure the Land Development Regulations, including the subdivision review regulations, require known historic resources be identified and that developers take appropriate measures to protect those resources, including but not limited to modification of the proposed site design, construction timing, and/or extent of excavation.
- Incentivize methods to increase adaptation of historic resources to climate change that is consistent with National Park Service Standards and protects the long-term stability of these structures.
- Continue to support efforts of the Biddeford Cultural Coalition, which advocates a strong role of arts and heritage in the city's social and economic fabric.
- Continue to support McArthur Library and its contribution to the arts and culture realm in Biddeford.
- Support the mapping of private cemeteries throughout Biddeford to better protect them from land use change and development.

Goal 3

REDUCE
The impact of climate change and sea level rise on Biddeford's historic, cultural and archaeological resources.

How We Get There:

- Conduct an assessment of existing historic, cultural, and archaeological resources that may be vulnerable to sea level rise and other climate change related weather events.

Goal 4

SUPPORT
Biddeford's historic, cultural and archaeological resources to the greatest extent possible.

How We Get There:

- Continue to support and fund efforts that enhance the promotion and marketing of Downtown through festivals and events such as the Biddeford-Saco Art Walk and River Jam festival.
- Support the adoption and implementation of a Biddeford Public Art Policy which will establish a Biddeford Public Art Program and the development of a Public Art Master Plan.
- Work with community partners, including Heart of Biddeford and Engine, to seek out financial and technical assistance opportunities to support the creative economy in Biddeford.
- Formally recognize the history and culture of Indigenous People who inhabited the area that is now Biddeford with the support of the Cultural Community.